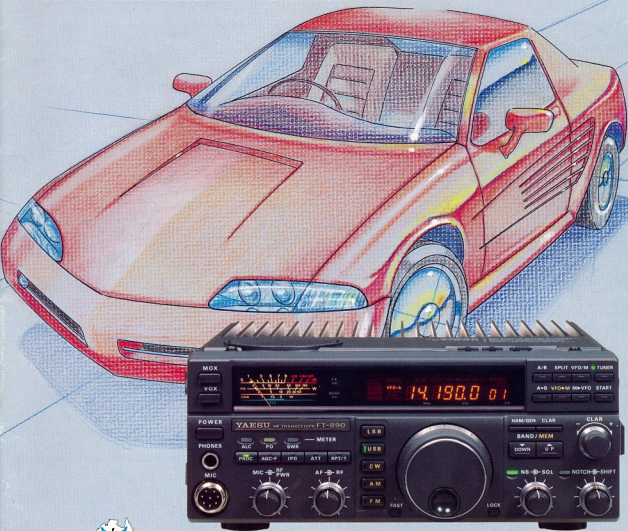


RADIO AMATEUR

AUGUST 1992

RRP \$3.25

- Review of Yaesu FT-890 HF Transceiver
- How to Write for AR
- Junk Box HF CW Transmitter



THE WIA RADIO AMATEUR'S JOURNAL

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Amateur Radio is published by the Wireless Institute of Australia, ACN 004 920 745 as its Official Journal, on the last Friday of each month.

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Deadlines Editorial Hamads

September 10/8/92 12/8/92

October 7/9/92 9/9/92

November 12/10/92 14/10/92

Delivery of AR: If this magazine is not received by the 15th of the month of issue, and you are a financial member of the WIA, please check with the Post Office before contacting the registered office of the WIA. ©

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Cover

Like a newly released high performance sports car, the Yaesu FT-890 HF transceiver has much to offer the enthusiastic operator. Read Ron Fisher's review on this latest Yaesu on Page 13.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs, that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

The world's first and oldest National Radio Society Founded 1910

Representing the Australian Amateur Radio Service — Member of the International Amateur Radio Union

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Editor's Comment

Ron Henderson VK1RH
Federal President

As your recently elected President I would like to devote this editorial to thoughts about the WIA and what it means to you and me. However, I should start with the mandatory boat story! Suspended from the ceiling of my garage, over my daughter's car, is a Mirror dinghy. My eldest son and I painstakingly restored it several winters ago and regrettably have only got it wet twice since then, and not at all last summer. This prompts me to ask, am I a balanced amateur? Have I been neglecting my children's summer water sports? Well, I make a public promise here to launch it as soon as the lake warms up!

Now down to business, why a WIA? It's survived since 1910, will it make the turn of the century? What does it do for you? Is that what you want? What do you do for the WIA? I suggest the WIA is not just a monthly magazine or a free QSL bureau and a renewal notice each year. The WIA has two main reasons for existence, firstly as your representative body and secondly as a learned society. The WIA is your representative body and "lobby group", for international, national and local affairs. Internationally it is recognised by the International Amateur Radio Union, which in turn is recognised with observer status by the International Telecommunications Union as the worldwide voice of radio amateurs. Nationally it is recognised by the Department of Transport and Communications as the only Australian society representing amateur views. Locally the Divisions represent amateur radio views to State and local governments.

Are your views being heard?

If you are a WIA member they can be; through your Federal Councillor and Division to the Federal body so that we can speak and confidently present a majority view. If you are not a WIA member I suggest your letters to the DoTC or even the Minister are barely worth your time and effort in writing and sending them. It's numbers that influence the bureaucracy and we would like you to join with the strength and swell our numbers.

You might ask why can't the local WIA Division or even radio club represent you? Well they can and do to an extent, but at their particular level of involvement. For example the Division is the body to press State or regional issues and a strong radio club may just be able to influence a local council, particularly so if you have an amateur on that council! But nationwide the demands become great and beyond the efforts of part time volunteer officers.

We have all heard the expression "Horses for courses". This applies to the WIA also. For example in the Federal Office we have our hard working General Manager, Bill Roper and his loyal office staff, working on a full time paid basis to provide you with members' services. They only carry out those actions which are more economically and effectively delivered from one site, the Federal Office. Other members' services are delivered by the Divisions. Generally these are less time critical, more directed to local and specific needs and often involve direct contact with members.

The representative issues of the future involve countering commercial pressures on our frequencies, bands and

sites. Most cannot be met head on. Rather, all parties must be accommodating and more willing to share that non consumed yet finite resource, the radio frequency spectrum.

So far I have said little about our learned society role. Amateur Radio magazine provides a forum for members' technical articles and supports our aim of self instruction (see the definition of the amateur service!). Although amateur radio is often seen as the hobby of the recluse, amateurs frequently gather for lecture meetings, fox hunts, hamfests, conventions and other "eye ball" occasions. With changes in social ways the Divisional monthly meeting has disappeared in major cities and is felt by some to be more the province of strong radio clubs.

Amateurs meet to talk amateur radio, not administration. You appoint office bearers, give them general guidance and let them get on with it. Or do you?

Have your representatives got a clear picture of your wishes? Are they allowed to get on with it without "bad mouthing" behind their backs, often on air? All this boils down to having control of the destiny of your hobby; and you can have that control through your membership of the WIA.

I invite you to do the Australian thing and share the responsibility. Join the WIA if you are not already a member, nominate for office and give a hard worker a spell for a year or so to recharge batteries and perhaps work a little DX! ar

WIA News

From the WIA Federal Office

Longlife RF Lightbulbs

A recent American Radio Relay League (ARRL) Newsletter gave more information about the new RF powered lightbulbs which have been mentioned in various publications. A representative of the company producing the lightbulbs states it is ex-

pected that the bulbs will have to be Federal Communications Commission type accepted.

The lightbulbs are expected to operate at 13.56 MHz, using a crystal oscillator, power amplifier, and a coil type antenna to "couple high frequency electrical energy into a mercury vapour plasma". Both the ARRL and the WIA will be keeping a close watch on this development from the point of view of potential RFI.

WIA DIVISIONS

The WIA consists of seven autonomous State Divisions. Each member of the WIA is a member of a Division, usually their residential State or Territory, and each Division looks after amateur radio affairs within their State.

Division	Address	Officers	Weekly News Broadcasts	1992 Fees
VK1	ACT Division GPO Box 600 Canberra ACT 2601 Phone (06) 247 7006	President Christopher Davis Secretary Jan Burrell Treasurer Ken Ray	VK1DO VK1BR VK1KEN 3.570 MHz 2m ch 6950 Rebroadcast Mondays 8pm 70 cm ch 8525 2000 hrs Sun	(F) \$70.00 (G) \$56.00 (X) \$42.00
VK2	NSW Division 109 Wigram St Parramatta NSW (PO Box 1066 Parramatta 2124 Phone (02) 689 2417 Fax (02) 633 1525	President Terry Ryeland Secretary Bob Lloyd Jones Treasurer Bob Taylor (Office hours Mon-Fri 11.00-14.00 Wed 1900-2100)	VK2UX VK2YEL VK2AOE From VK2WI at 1045 and 1915 on Sunday on the following frequencies and modes: ("1045 only) 1845 AM; 3595 AM morning and SSB evenings; 7.146 AM; 10.125 SSB; 24.910 SSB; 28.320 SSB; 52.120 SSB; 52.525 FM; 144.120 SSB; 147.000 FM; 438.525 FM; 1281.750 FM; On relay on behalf of VK2WI on 18.120 SSB; 584.750 ATV Sound, Ch 35, Sydney region. Plus automatic relays to 2m repeaters surrounding Sydney and manually to many country repeaters. News headlines by phone (02) 552 5188; General Divisional Information (02) 651 1489.	(F) \$66.75 (G) \$53.40 (X) \$38.75
VK3	Victorian Division 40G Victory Boulevard Ashburton VIC 3147 Phone (03) 885 9261	President Jim Linton Secretary Barry Wilton Treasurer Rob Hailey Office hours Tue & Thur 0830-1530	VK3PC VK3XV VK3XLV 1.840 MHz AM, 3.615 SSB, 7.085 SSB, 147.250 FM(R) Mt Macedon, 147.225 FM(R) Mt Baw Baw, 146.800 FM(R) Mildura 146.700 FM(R) Mt Dandenong, 438.0 75 FM(R) Mt St Leonard 1030 hrs on Sunday.	(F) \$72.00 (G) \$58.00 (X) \$44.00
VK4	Queensland Division GPO Box 638 Brisbane QLD 4001 Phone (07) 284 9075	President John Aarsse Secretary Ken Ayers Treasurer David Travis	VK4QA VK4KD VK4ATR 1.825, 3.065, 7.118, 10.135, 14.342, 18.132, 21.175, 24.970, 28.400 MHz. 52.525 regional 2m repeaters and 1296.100 0900 hrs Sunday Repeated on 3.605 & 147.150 MHz, 1830 Monday.	(F) \$70.00 (G) \$56.00 (X) \$42.00
VK5	South Australian Division 34 West Thebarton Rd Thebarton SA 5031 (GPO Box 1234 Adelaide SA 5001) Phone (08) 352 3428	President Bob Allen Secretary John Highman Treasurer Bill Wardrop	VK5BJA VK5PJH VK5AWM 1820 kHz 3.550 MHz, 7.095, 14.175, 28.470, 53.100, 145.000, 147.000 FM(R) Adelaide, 146.700 FM(R) Mid North, 146.900 FM(R) South East, ATV Ch 34 579.000 Adelaide, ATV 444.250 Mid North Barossa Valley 146.825, 438.425 (NT) 3.555m 146.500, 0900 hrs Sunday	(F) \$70.00 (G) \$56.00 (X) \$42.00
VK6	West Australian Division PO Box 10 West Perth WA 6005 Phone (09) 388 3888	President Cliff Bastin Secretary John Farnan Treasurer Bruce Hedland-Thomas VK6OO	VK6LZ VK6AFA 146.700 FM(R) Perth, at 0930 hrs Sunday, relayed on 3.560, 7.075, 14.115, 14.175, 21.185, 28.345, 50.150, 438.525 MHz. Country relays 3.582, 147.350(R) Busselton 146.900(R) Mt William (Bunbury) 147.225(R), 147.250(R) Mt Saddleback 146.725(R) Albany 146.825(R) Mt Barker broadcast repeated on 146.700 at 1900 hrs.	(F) \$60.75 (G) \$48.60 (X) \$32.75
VK7	Tasmanian Division 148 Denwent Ave Lindisfarne TAS 7015	President Tom Allen Secretary Ted Beard Treasurer Peter King	VK7AL VK7EB VK7ZPK 146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.750 (VK7RNN), 3.570, 7.090, 14.130, 52.100, 144.100 (Hobart) Repeated Tues 3.590 at 1930 hrs	(F) \$67.00 (G) \$53.65 (X) \$39.00
VK8	(Northern Territory is part of the VK5 Division and relays broadcasts from VK5 as shown received on 14 or 28 MHz.)		Membership Grades Full (F) Pension (G) Needy (G) Student (S) Non receipt of AR	Three-year membership available to (F) (G) (X) grades at fee x 3 times

Note: All times are local. All frequencies MHz.

169th member of the ITU

The International Telecommunications Union has just announced that Croatia has become the 169th member of the ITU. Situated between Slovenia, Hungary, Serbia and the Adriatic, Croatia has a population of over 4,700,000, and an area of about 56,500 sq km.

DoTC Works on Standards

The Department of Transport and Communication's Telecommunications Policy Division has recently established a Standards Policy Section. This section will co-ordinate the Division's standards activities at global, national and local levels, promote standards activities, and provide input to the formulation of policies on standards in developing areas.

Intruder Watch Certificates

The WIA has recently received the custom of presenting certificates to those amateurs who have been most active in sending Intruder Watch reports. Certificates for 1991 were forwarded to the following:-

VK5TL Tom Laidlaw
VK4AKX Col Robertson
VK4BG Ron Glassop
VK4BTW Tom Walker
VK4BHH Norman Richardson
VK4BXC Jack Barnett
VK6RO Graham Rogers
VK6XW Karl Hennig

The certificates are a small token of appreciation from the society representing the amateurs of Australia for the dedication and enthusiasm displayed over a long period by these intruder watchers.

There is always room for more Intruder Watchers. Unless the Intruders into our bands are identified and reported, there is no hope

whatever of having them removed. Further information and log sheets are available from the Intruder Watch Co-ordinator, Gordon Loveday, at "Aviemore", Rubysvale, QLD, 4702, Freepost No 4, or on packet VK4KAL at VK4UN-1.

11th Computer Networking Conference

For our computer enthusiasts, we pass on a note from the ARRL that the 11th ARRL Amateur Radio Computer Networking Conference will be held in New Jersey on 7th November 1992. Camera-ready papers should be received by 21st September. Author's guidelines are available from Lori Weinberg at the ARRL, 225 Main Street Newington, CT 06111. Topics will include digital signal processing, digital speech, packet satellites, HF packet investigations, protocols, network development, future systems, hardware and software.

Responses to Draft Regulations

Thank you to all those who have made submissions to DoTC about the draft regulations which were published in the June issue of Amateur Radio Magazine.

The Federal Office has received copies of a number of these submissions, and will be considering them when preparing for the final discussions with DoTC before publication of the new regulations. It has been very interesting to read the variety of matters raised, and the enthusiasm with which some correspondents have pressed their claims.

Going Overseas?

Want to be recognised as an amateur wherever you go? The Federal Office has on hand stocks of the WIA badge in the internationally recognised

diamond shape. This is the shape that amateurs in most any country will recognise.

There are two versions, the standard diamond badge, and one with space to have your own call sign engraved. Both can be obtained through your Divisional Bookshop for \$4.00 each. If not in stock there, the Bookshop Officers will be happy to get them in for you.

Novice Study Guide

Several years back the WIA published a Study Guide for NAOCP, which took the DoTC syllabus for the Novice examination and expanded it to define the depth of examination for each topic. Stocks of this booklet are still available.

It is strongly recommended that both students and lecturers use this booklet to ensure that all the necessary detail of study has been covered. These Study Guides for NAOCP are also available from Divisional Bookshops and cost only \$1.50.

Some Spare Time!

The Central Bureau of the International Earth Rotation Service (IERS) has announced that a "positive leap second was inserted in the scale of Co-ordinated Universal Time (UTC) at the end of June 1992". This means that the last minute of 30th June 1992 was 61 seconds long.

In case you missed it, it occurred at 10hr 0m 0s Australian Eastern Standard Time on Wednesday 1st July 1992. The adjustment represents the 17th such since the introduction of the present system of time scale co-ordination in 1972, and serves to keep the UTC time scale (derived from International Atomic time) in line with the scale derived from the rotation of the earth.

HAMADS

Members are reminded that the closing dates for Hamads for future issues of Amateur Radio magazine are given on page 1 of each issue. However, the Editors are happy to accept Hamads at any stage during the month. You do not have to leave it until the closing date. In fact, it pleases them more if the Hamads arrive several days in advance to reduce the pressure around the closing date.

Please present your Hamad as you would wish to see it presented in the magazine (look at the presentation of Hamads in the current issue). Make sure that you have included your identification in the body of the advertisement, and have specified whether it is "For sale" or "Wanted".

Federal Council

It is not only the Australian amateur licence conditions which are undergoing change at present. The Federal Body of the WIA is also undergoing change with a view to bringing the company structure into line with the business practices of the 1990's.

The first meeting of the re-organised Federal Council of the WIA took place on Saturday 13th June. To allow as much of the day as possible to be used, the meeting was held in a conference room at Melbourne Airport. Councillors flew in early, mostly before 8 am, worked through the day, and flew home in the late afternoon and evening.

It was a strenuous day, but by the end considerable progress had been made towards agreement on a number of matters raised, and an addendum to the Articles of Association to cover the proposed changes had been drafted. All outstanding business from the previous Federal Executive, which will no longer exist under the new structure, was transferred to the Forward Business list of the Federal

Council, and the records of the Executive closed.

The next meeting of the Federal Council will be on the weekend of 17th-18th July. The meeting will be held as usual at the Federal Office, and will be reported in the September issue of Amateur Radio magazine. Much of this meeting will be taken into consideration of the future financial affairs of the WIA, including preliminary discussion of the 1993 Budget, but time will also be allocated for consideration of recruiting strategies.

Federal Vice-President

Under the previous structure of the WIA Federal body, the Executive appointed a Vice-Chairman, whose main tasks were liaison with the President over policy matters, or as Chairman of meetings in the President's absence.

At the Federal Council meeting on 13th June, the Council elected Rob Apathy, VK1KRA,

as Federal Vice-President, with responsibility to deputise for the President at meetings or similar functions within or outside the scope of normal WIA activities.

It is hoped that Rob will be able to meet with Divisional representatives during some of the travel which his Company requires him to do.

Statistician Wanted

Now that WIA Exam Service has been running for nearly a year, and the Examination Subcommittee is starting to work on the theory question banks, it would be very useful to have some independent evaluation of the individual questions to help the decision making.

Is there a member familiar with the statistical processes for evaluation of multi-choice questions? We realise that it will be some time before individual questions have been asked often enough to constitute a statistical sample, but

perhaps now is the time to do the planning so that we can know what information should be kept for the future. Comments from examiners or candidates come in if there is a question that displeases someone, and all these will be considered by the subcommittee. But we really should know if there are some questions which everyone (or no-one) passes, as these are not really serving much purpose.

Morse Code Examinations

WIA Exam Service reports that some candidates are failing simply from nerves rather than from lack of ability to receive Morse code. One of the main hopes of the devolved system was that in smaller groups and in familiar surroundings candidates would be more relaxed, and so able to perform better. No doubt this has happened for many candidates, and we can only

say to those still stressed by the examination "keep trying".

Most examiners go out of their way to make conditions comfortable for candidates, some of them playing the practice section two or three times to help settle the nerves before the actual test is run. Others have gone to much trouble to ensure the best possible quality reproduction of the tapes. The thanks of WIA Exam Service go to all those who have made so much effort for the sake of our new recruits.

A word to those candidates who are practising sending Morse code by automatic means — the regulations say that the candidate must demonstrate the ability to send "by hand"! Go back to the old key and practise on it before you attempt the examination!

Divisional Bookshops

Do you as a member find that the Divisional Bookshops can supply your needs? Are

ICOM

adds a new sophistication to the meaning of the word basic...

To most of us basic means you miss out on performance and quality, but not any more, the new Icom IC-728 might be Icom's 'basic' H.F. transceiver, but in fact it makes many other transceivers look pretty basic by comparison!

\$1678 r.r.p. Call for special introductory pricing!

Please allow \$35 for postage and insurance within Australia mainland or Tasmania. Other areas please call for pricing. E&OE, all prices and information subject to change without notice.



You might think that a few years of reviewing H.F. transceivers would make any amateur a bit jaded, well obviously not, here is what Neil Duncan, VK3OK, had to say about the IC-728...

"Getting the IC-728 up and running is a treat"

"It almost runs itself — the learning time is very low"

"DX'ing on 20 metres is a snap with a hot little receiver like this one!"

The manual "is an absolute pleasure to use"

"I must say that the IC-728 offers very good value for money indeed."

Amateur Radio Action — 9 June 1992

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there titles or topics which you would like to see on the Bookshop lists? If there are, please let your Division know, and we will ask the supplier if a source of these items can be found. If you already know the source or publisher, that information may save the supplier considerable trouble. It may be that the reference book you find so valuable is just what a number of other members have been trying to find.

More on E-Lamps

The ARRL Newsletter of June 24th 1992 states that the manufacturer of the new rf-powered light bulbs, the so called E-Lamps, should not be a concern in relation to RF interference. The company producing the globes employs a number of amateurs, who are obviously sensitive to the possibilities. The manufacturer details tests which have shown no harmonics below 420 MHz and, above that frequency, that the RF will only open the squeal if the antenna is actually touching the globe. Unfortunately there is no word as to when samples will be available.

FCC and Special Callsigns

Included in a long article in the same Newsletter about the American Volunteer Exam Coordinators (VEC) examination system, which apparently works very satisfactorily, is a short note stating that:

"A return to issuing special callsigns is also on the FCC's mind; however, a fee would be necessary for the special service".

US Ponders Spectrum Needs

Further news from the US states that:

"The National Telecommunications and Information

Administration has opened a broad-based inquiry into the future requirements for the use of the radio frequency spectrum in the United States, and technology trends that will affect use of the radio spectrum."

Of interest to us, because what happens in the US tends to affect the rest of the world, is the comment:

"Two paragraphs on Amateur Radio posed the following questions for the Amateur Service:

- *What factors could either increase or reduce the spectrum requirements of the Service?*
- *Is the current spectrum available to amateurs adequate?*
- *What new techniques may increase the ability of the Amateur Service to share with other radio services in certain frequency bands?"*

Amateur Radio Changes In Russia

I quote from a letter recently received by the WIA from the Chief of the Krenkel Central Radio Club of the Russian Federation:-

"In connection with the disintegration of the USSR into individual countries the Krenkel Central Radio Club of the USSR has passed under the jurisdiction of Russia and now becomes the Krenkel Central Radio Club of the Russian Federation (Russia).

After transition under the jurisdiction of Russia the Krenkel Central Radio Club and its QSL-Bureau (Box 88) will proceed with its work as in former times — carrying on the QSL card exchange for Russia and other countries (former republics of the USSR), and also passing on the diploma exchange and the sending of contest logs for international competitions.

We wish success to you on the good cause of radio amateur development. 73."

Callsign Number Plates

In response to the item in the July issue of Amateur Radio about callsigns on car registration plates, Tim Mills VK2ZTM reports that NSW allows up to six mixed letters and numbers on car number plates, which covers amateur callsigns. An annual renewal fee is charged, and several well known amateurs currently display their callsigns on their car number plates.

WIA Bookshops

The WIA is pleased to announce that arrangements have been made with the supplier of books to the Divisional Bookshops for an extended range of titles.

If you look closely at the book listing on the inside back cover of the August issue of Amateur Radio magazine you will note these additions, particularly a number of new RSGB publications which are now imported direct.

It is interesting to note that sales of books have been increasing as the economic situation in Australia has worsened.

New Member of the ITU

The latest International Telecommunications Union (ITU) press release announces that Slovenia has become the 170th member of the ITU.

The press release commented that:

"Slovenia is bordered on the north by Austria, on the North-east by Hungary, on the south east by Croatia and on the west by Italy. It has a land area of 20,251 square km. Its capital is Ljubljana. It has a population of 1,974,839 inhabitants (1991)".

Changed Country Listings

The Deutscher ARC (DARC), which is the German equivalent of the WIA, has changed its listings for the former Yugoslavia for awards and contest multipliers, now recognising as separate countries Croatia (YU2); Slovenia (YU3); Bosnia-Herzegovina (YU4); and Yugoslavia (YU1, 5, 6, and 7).

New Satellite

Kevin Olds VK1OK, the WIA IARU Region 3 representative, has provided information from the Korean Amateur Radio League (KARL) about a new satellite, KITSATFA, which is scheduled for launch on 12th August 1992.

The satellite is being built as a co-operative project between the University of Surrey and the Korea Advanced Institute of Science and Technology (KAIST), under the guidance of experienced UOSAT engineers. It will be launched as a secondary payload on board the Ariane V-52 mission, which has as its primary payload the oceanographic satellite TOPEX/POSEIDON.

The target orbit is nearly circular, with a semi-major axis of 7700 km and inclination of 66 degrees. The KITSATFA payloads comprise four items:-

1. Digital Store-and-Forward Communication (DSFC), providing open access store-and-forward digital communications using the standard protocols of the PACSAT Protocol Suite for message forwarding.
2. CCD Earth Imaging Experiments (CEIE) using both wide angle and narrow field cameras to provide high resolution images which can be accessed by a wide audience.
3. Digital Signal Processing Experiment (DSPE), to be used for speech synthesis, store-and-forward speech relay and high speed modulation experiments, to allow

multilingual greeting messages similar to DOVE, and conversion of digital uplink to FM voice downlink; and

4. Cosmic Ray Experiments (CRE), which will collect data on total radiation dosages and the occurrence of highly energetic cosmic rays, as well as monitoring the effects of the radiation on the satellite components. KITSATFA will be in an orbit with much worse radiation characteristics than other satellites.

KITSATFA operations will be managed by KAIST from their ground station (HLOENJ) which is already active in Korea. It should be a valuable addition to the fleet of amateur satellites.

DXCC Vote Results

The June issue of Amateur Radio magazine gave notice of proposals under consideration by the ARRL DX Advisory Committee. The results of the voting were announced on 22nd June, and reached this office shortly thereafter. The committee voted unanimously against making Ceuta and Melilla separate DXCC countries, against deleting the Spratly Islands from the DXCC countries list, and against deleting Southern Sudan from the DXCC countries list.

News from the IARU

The calendar of the IARU received this week announces several items:-

- As the result of a poll of member societies, the Albanian Amateur Radio Association has been admitted to membership of the IARU. As at 23rd June 1992, there were 23 Albanian amateurs with transmitting licences. In addition, 32 licences have been issued in the series ZA1Zxx for foreign amateurs who have visited the country. Licences for foreign amateurs now being issued use call signs of the format of ZA/(personal call sign).
- The IARU membership of the Estonian Amateur Radio Union has been re-activated after a hiatus of over 50 years. Although its membership lapsed for several decades, during which time representatives of the Estonian Federation of Radio Sports participated indirectly in IARU through the Radio Sport Federation of the USSR, the Estonian membership was never rescinded.
- The Associations of both Slovenia and Croatia have

also applied for membership of the IARU.

- Voting is still continuing on the admission of the Chinese Taipei Amateur Radio League. The WIA voted YES in this issue.

Overseas Balloons

A contributor providing information about the recent balloon launches of transmitters in Victoria notes also that a number of similar experiments have been carried out in the USA, including one carrying a 2 metre repeater which was accessed from over 1200 km away, and one carrying ATV equipment providing video images of the surface below from 100,000 feet.

There is an increasing interest in balloons carrying amateur radio experiments right around the world at the present time.

Possible Pirate Station

In recent months the WIA has received several complaints about the apparent pirate operation of a station using the callsign VK2FEW.

The main complaints have come from the address of the previous holder of this callsign, Mr N Sato, who has been living in Sweden for the past couple of years. Mr Sato advises that he has not operated with the callsign VK2FEW since leaving Australia.

QSL cards are arriving from all around the world, and are an embarrassment to the people looking after Mr Sato's affairs in Australia.

Several Australian amateurs who have worked VK2FEW stated that his operating technique was quite good, and they had no suspicions whatever that he was a pirate. If you know the location or identity of the apparently bogus VK2FEW, please let the DoFC know.

Bill Roper VK3ARZ

AAAH-H-H It's finished!!

This edition of Amateur Radio magazine is brought to you by the combined efforts of a small team of workers, who have made every effort to produce a top-class issue under some difficulties.

As announced last month, our Managing Editor resigned at the end of June, at which time the Editor was somewhere "Back of Bourke", and arrangements were being made to change typesetters in an attempt to reduce production costs. Negotiations with the typesetters revealed a considerable cost saving if all material could be supplied on disk, so arrangements were made for a contract typist to come in for a few days. Unfortunately, this typist cancelled the arrangement at short notice, but did we panic? NO!

The General Manager cracked his whip even harder than usual, started earlier than his usual 7 am, and passed over another article for keying-in whenever any of the office staff paused for breath. With the assistance of Bruce Bathols VK3UV and his wife Gwen, we had all items keyed in and ready for the Editor on his return to the office. Even Vicki our graphics person was caught up in the tide to prepare quickly a couple of diagrams. Sincere thanks to those columnists who provided copy on disk as well as hard copy.

Enjoy your magazine, made up of your contributions and, while you are reading it, give a thought to all the time and effort that goes into producing Amateur Radio magazine each month.

**Brenda Edmonds
VK3KT
ar**

**Remember to
leave a three
second break
between overs
when using a
repeater**

HF Band CW Transmitter From Junk-Box Parts

Drew Diamond VK3XU
"Nar Moran" Gatters Rd
Wonga Park VIC 3115



Front Panel (cover removed)

MY SHACK IS PROBABLY like that of countless other fellow radio enthusiasts, where squirreled away are all sorts of interesting and "useful" items, such as power transformers, coils, switches, tubes (or valves if you like), high voltage capacitors, and so on. When you think about it, that's about all it is, just a collection of junk, with no useful purpose. In nostalgic mood one day I thought; why not build a handy, all HF band CW transmitter from them? So that's what I did. Agreed, it is "old hat" it has

indeed "all been done before". So too has many a cricket ball been bowled down a pitch, model loco built from scratch.

A search of 50's and 60's radio handbooks revealed that many of the circuits of that time were very alike, being based on a 6AG7/6CL6/12BY7 or similar crystal oscillator/multiplier, followed by a power tetrode of the 807/1625/6146 variety. I chose to "blend" a design from the 1961 ARRL Handbook — which employs a 6AG7-807 configuration with plug-in oscillator and output tank coils (flexible,

but messy), and a design from the 1967 edition, which uses 6AG7/6146 and band-switched tank coils. An 807 was chosen as the PA tube, as they are still relatively cheap (if needed to be purchased new) and easy to obtain. With regard to the original articles, the following additional observations are made;

At first it was thought to be a fairly straightforward job, just follow the details provided, but adapting and modifying where necessary to suit available parts on hand. The 6AG7 oscillator was blobbed up on a scrap of chassis, and worked well first time. Sufficient output power to light a small 6V lamp link-coupled to the plate tank gave spur to press on with the project. So a chassis and covers were bent up to house the rig. Power supply and oscillator were wired and tested first, with success. Then the 807 PA was built, and fired-up into a dummy load. I had forgotten how ill-mannered these beasts could be. It screamed like a banshee. MF, HF and VHF parasitics were all going at once. The BC radio in the shack, which was tuned to 3RN, hummed and buzzed, as did the HF receiver nearby. Several mA of grid current with no crystal installed showed that the PA was hopelessly unstable.

One of the attractive facets of tube transmitters is that you don't need fancy test equipment to find out what's going on. A neon lamp, such as an NE-51 attached to a plastic knitting needle (watch those high voltage areas!) may be used to test for parasitic oscillations. With no oscillator drive to the PA, there should be no grid current, and constant plate current regardless of the tuning of the input or output tank. To avoid damaging the PA tube, the key should only be closed for short periods of perhaps 10 seconds. The neon may be placed NEAR the plate cap. The colour of any glow gives a clue as to the type of oscillation occurring. A ready-purplish glow indicates HF oscillation, whereas yellow indicates MF or LF oscillation. The problem can then be tackled accordingly.

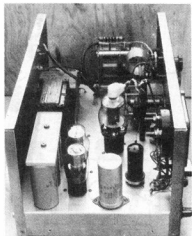
Here is probably a good point to express a word of warning — any person building such a project must be acquainted with the hazards of higher voltages. If you have never worked with high voltage equipment before, seek the guidance of someone with the required experience. Furthermore, never work alone on exposed powered-up equipment, always have some other person in your work area, and make sure he or she knows where the power switch is located.

The standard capacitive divider neutralisation technique was applied first, with promising results, but parasitics, thought to be VHF, were still present. These were suppressed (after some experimenting), with a 100 ohm, 1W carbon resistor wound with 7 turns of 22 B&S enamelled wire installed in series with the plate connector, right at the cap, and a 100 ohm 1W carbon wound with 13 turns in series with the grid connection to the 807. Extra by-pass capacitors were also placed at strategic points around the circuit. The PA was then unconditionally stable. The circuit may look more complex than is thought necessary, for which I make no apology. The skilled and experienced radio worker will know just how "bare-bones" a thing can be made and still obtain trouble-free operation. However, for the relative newcomer, frustration and disappointment may be avoided with the investment of just a few extra components and a little more time (I think most would agree that time spent in construction is more pleasant than in de-bugging?).

Grid currents on most bands is about 2 to 4mA. Power output is about 30W on bands up to 18 MHz (yes, a WARC band with a 27 MHz 3rd overtone 9 MHz crystal, that's doing it on the cheap!), and about 25W on 28 MHz doubling from a 14 MHz crystal. The TX is very versatile, as any crystal can provide up to 3 or 4 bands of operation (as of old), by multiplying in the plate tank of the oscillator — the PA *always* operating as a straight-through class C amplifier. VXO pull on the crystal allows a useful degree of frequency agility — handy for dodging occupied frequencies, and netting on to other stations as required.

The circuit schematic attempts to show that the output tank circuit and related components should all be located above chassis. An ordinary 4-pie 2.5 mH 250 mA RFC is adequate as plate feed choke, and a similar unit should be used for the safety choke at the output. The plate choke may be fitted to length of insulating material as shown in the photo. The 2 or 3 kv 1000 pF ceramic mica plate blocking capacitor is also mounted upon the insulating rod.

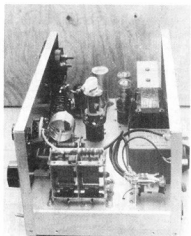
Ready-made B&W coil stock was used for the tank coils. Naturally, home made coils wound upon ceramic, bakelised paper or glass formers would also serve. Wire gauge is 20 B&S. The coil for the VXO is not critical, any shielded or toroidal coil of about 5 to 10 μ H will give a useful amount of downwards frequency pull on your crystal(s).



Side view showing filter capacitor mounting arrangement.

The "Tune" variable capacitor should be a 250 or 300 pF with fairly wide-spaced plates, an ordinary BC type may just be adequate at lower plate voltage, but try for wider spacing to avoid arc-over problems. The "Load" capacitor may be an ordinary 2 or 3-gang BC type. Note that the "OSC" variable capacitor must be insulated from chassis. Two fibre washers and a slightly enlarged mounting hole will do the trick. The shaft sits at 300 Vdc above ground, so it must have an insulated knob attached, with the grub screw well recessed. So too must the neutralising capacitor be insulated from chassis. A "Polar" or Jackson 10 pF unit with ceramic insulated mounting bushes is ideal. At least one supplier here is selling 300 μ F/350 V electrolytic capacitors quite cheaply. But they may not have mounting brackets. Shown is suggested mounting method. Mica capacitors should be used where indicated, although in most instances ordinary disc ceramics would probably suffice. Similarly, micas may be used instead of disc ceramics. By-passes may be anything from about 0.003 to 0.01 μ F, except as shown at the "earthy" end of the oscillator tank, which must be 1000 pF mica for the neutralising circuit to work correctly.

The power transformer shown is a 600 Vct type ("300 volts-a-side") at about 150 mA. Of course, a transformer different from this may be used. You may have a 770 Vct for more power output (the maximum plate voltage for the 807 is 600 V, although in practice they will take more than that without blushing too much), or a 550 Vct for lower power. Furthermore, the HT voltage may be lifted by about 40% at the cost of a less smooth HT sup-



Side view showing output components.

ply if no 10 H filter choke is used. The series resistor feeding the two regulator tubes may need to be altered according to which transformer is used. A value which keeps the tubes reliably glowing under all conditions without them getting too hot is the right one.

The antenna change-over relay shown is a 6 Vac type, because that's what I had on hand. A simple diode and capacitor arrangement will permit use of a 6 Vdc type, or a 12 Vdc type may be worked from a two-diode/two-capacitor voltage doubler powered from the 6.3 Vac winding. My junk-box sported a 5 mA meter (1 mA have become rather scarce), so the circuit shows resistor-values for the 5 mA movement. Recalculate for other sensitivities (eg 1 or 2.5 mA, in which case, a shunt will be required for 0.5 mA grid current). The bottom 100 K resistor in the HT multiplier string simply takes the voltage strain off the meter switch and by-pass capacitor. The 3300 pF (not critical) HV capacitors around the rectifier diode bridge should suppress any line-related switching transients, and so reduce side-band noise, and offer some protection to the diodes.

A few suggested alternative oscillator tubes include: 6CL6, 12BY7, 6AQ5, 5763, 6L6 and 6V6, with due consideration to pin connections. For glass envelopes, a tube shield is recommended to aid stability.

The construction and troubleshooting of this TX has been a very interesting and instructive project, and brought me back in touch with a technology — which (perhaps sadly), appears to be rapidly dying out in amateur circles, in this country anyway. It is not a static museum dis-

play however, and finds frequent and effective use on the HF bands.

In one of the outer eastern suburbs of Melbourne, not far from here lives a recently retired man, who has taken up again his hobby of amateur radio. His transmitter is a simple two valve job, not unlike this one, crystal controlled on 40 m, with a simple companion receiver. He may be heard almost daily, working DX, far and wide. I do believe that he is hav-

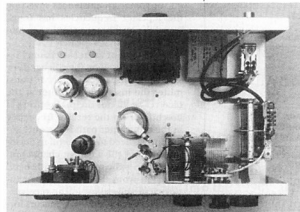
ing greater enjoyment with his set-up than many do who have the latest "bells — and-whistles" box from Mr Y Musen's factory.

Copies of the original articles listed may be obtained by writing to me at the address above. An A4 size SASE for reply would be appreciated. The transmitter and a matching VFO may be inspected at this QTH after confirmation on 03 722 1620. Have fun.

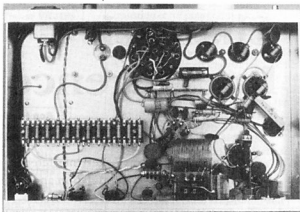
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Above chassis view.



Below chassis.

The Tuned Circuit as a Tool

Robert R McGregor VK3XZ
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Somerville 3912

RF CIRCUIT INVESTIGATIONS and measurements can be both difficult and tedious. Many times, what is really wanted is a determination of how far the resistance or reactance is from that expected or some indication of a trend so that we know which way to go.

Frequently, it is easier to measure the deviation, rather than the absolute value. An auxiliary tuned circuit, consisting of, for instance, an inductor and a variable capacitor, for the frequency of interest and your grid (or other element) dip oscillator can supply a lot of answers. Set the dipper oscillating at or near the frequency of interest, loosely couple it to the tuned circuit and tune it to resonance. If

the unknown is expected to have a low resistance or reactance, connect it in series with the auxiliary circuit and retune the circuit to resonance. The variation is the unknown reactance. If the tuning capacitor has to be reduced in value, the unknown is inductive. If the capacitor has to be increased, the unknown is capacitive. For medium to high unknown impedances, connect it in parallel with the auxiliary circuit. After retuning, an increased capacitance indicates the unknown is inductive and a decreased capacitance indicates it is capacitive. Known, fixed capacitors can be used to calibrate the tuning capacitor.

To determine the resistive component

of the unknown, it is necessary to have an indication of either the voltage across, or the current flowing in the auxiliary circuit. Record either the voltage or current with the unknown connected, disconnect the unknown and retune. Now load the auxiliary circuit with non-inductive resistors until the measured current or voltage is re-established. The loading resistor value equals the resistive component of the unknown. Slight retuning will eliminate the effect of stray capacity across the "non-inductive" resistors. The amount of retuning required can give an indication of how inductive the resistors are.

The tuned circuit constants should have a reactance of 100 to 120 Ohm at the frequency of interest. For parallel feeders, a split stator or two capacitors in series could be used. You can use a parallel "floating" trimmer to achieve the desired L/C ratio. The tuned circuit should be left unshielded to reduce spurious effects whilst at the same time avoiding coupling to other, adjacent circuits. Some typical uses of the above technique would be to check the impedance of an antenna or measure the input impedance of an amplifier. Knowing is better than guessing, especially where a PA is concerned — even an auto tune circuit can run out of range!

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Cross Modulation and Adjacent Channel Interference

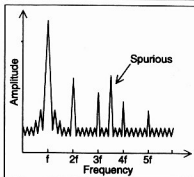
Ron Henderson VK1RH
171 Kingsford Smith Drive
Melba ACT 2615

Continuing our series on pager interference, this article is devoted to cross modulation and adjacent channel interference.

WHAT IS CROSS Modulation? Cross modulation occurs when an active linear device is nearing its non-linear state. Bear in mind that no device is perfectly linear. As a result a very strong signal may transfer some of its energy to a much weaker signal. Whilst there is no mathematical relationship between the two, cross modulation can affect any receiver which does not have sharp selectivity before its first active stage. Cross modulation can be negated with the insertion of a notch filter on the strong unwanted frequency and/or a band pass filter on the wanted frequency.

What is adjacent channel interference? That's a question HF operators don't ask for they are well aware of the interference that occurs when they operate on a frequency too close to an existing QSO. Their transmitted sideband signal occupies nominally 2.8 kHz and if this overlaps the next user, some of their transmitted energy will get into the other operator's receiver and disrupt that QSO. On the channelised segments of the VHF and UHF bands our band planning generally eliminates this type of interference caused by amateur sources.

Pagers are also frequency planned on a channelised band plan. Although we may not expect interference, because our bands do not overlap, it is a practical reality that transmitters, even in CW mode, do not radiate solely a single frequency.



Indeed a typical transmitter CW output looks a little like Figure 1.

Harmonics of the desired frequency are generated together with sidebands of the carrier and sideband noise. Spurious emissions, not related to the carrier frequency may also occur, finally there is wide band low level noise, appearing as mush in the diagram.

Pager transmitters have a specification set for the fall off of sideband noise, but for pagers with carriers close to the upper end of 2 metres, around 148.0125 MHz, some leakage occurs downwards into the amateur band. Should the level of that leakage be still high at an amateur frequency in use, say 147.950 MHz, a possible repeater output, then the amateurs in the vicinity will hear it as a noise signal on their FM transceivers.

How can we control this problem?

There are several methods available:

The amateur band plan could be altered to avoid the problem frequencies at the top of the 2 metre band. We have done this on some sites, for the pager sidebands and sideband noise will be a problem for co-sited repeaters with inputs just below 148 MHz. Indeed this has given rise to "upside down" repeaters, ie, their input and output frequencies have been inverted. In some circumstances inverting the repeater frequencies has transferred the interference problem to mobile users of that repeater.

In the case of adjacent channel interference caused by the sidebands or sideband noise of an adjacent transmitter the insertion of a filter at the receiver will not help. Inserting a notch filter on the receive frequency in the transmitter path is the only solution. We need to be careful in deciding whether the adjacent channel interference is the result of a wide band emission from the transmitter or insufficient selectivity in the receiver.

If the pager interference occurs further down the 2 metre band the amateur can add filters on the wanted frequencies to improve the front end selectivity and attenuate signals in the top end of the band. Note that adding notch filters tuned to the pager frequency may also assist in this case but would be of little use near 148 MHz.

Amateurs could take a lesson from commercial operators and add sub-audible tone squelch to their transceivers so that only signals carrying the squelch tone will open the mute.

Why has this problem arisen? Pager transmitters and sensitive, but wide band amateur transceivers are not compatible. The selectivity of amateur VHF and UHF transceivers is not good. Many have very wide receiving ranges, which leads to minimal input tuning.

How can commercial operators exist in this environment? In a commercial installation front end sensitivities of 0.35 μV are not uncommon, amateur transceivers often boast 0.2 μV but this is achieved at the expense of selectivity. In a commercial repeater situation receiver input sensitivities of 0.15 μV are often realised but only in conjunction with \$3000 worth of cavity filters. Simply, the higher engineering standards adopted for their equipment (which shows in the costs of their transceivers) says it all. As noted above they have also been required to adopt tone squelch to reject unwanted signals.

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Equipment Review

Ron Fisher VK3OM
24 Sugarloaf Rd
Beaconsfield Upper VIC 3808

Yaesu FT-890 HF all mode transceiver.

At long last Yaesu have brought out an update for the FT-757. For you Yaesu stalwarts out there, the wait has been worth while. This transceiver has brought Yaesu fully into the 1990s, along with the proven and undoubtedly most popular top line transceiver on the market, the FT-1000, the excellent FT-990, and the value leader FT-747. Yaesu are well and truly back in the amateur HF market. From that, you have probably deduced that I like the FT-890 which indeed is absolutely correct.

Enter the FT-890.

THE FT-890 RETAINS most of the desirable features of the old 757 but also incorporates many new ones. Measuring 238 mm wide, 93 mm high, 243 mm deep it is only 5 mm deeper than the 757. All other measurements are the same. Weight is up a mere 6 kg. This makes the FT-890 one of the smallest and lightest HF transceivers. It is beaten only in weight by the FT-747, but not in size which is essentially the same. Consider this. The smallest transceiver on the market, now with an optional built-in automatic ATU which covers the full range of amateur bands from 160 to 10 metres and you start to get the picture. All of its rivals' ATUs only cover 80 to 10 m, not 160 m. Let's look at a few of the other nice new features. A most effective RF speech processor. A clarifier with a ± 9.9 kHz tuning range, similar to the clarifiers you find on the top line rigs. A notch filter operating at the lowest IF and an IF shift control help attack QRM.

One of the very handy new features is the ability of each selected frequency range to retain the last used frequency. This can in effect give you many extra memories. Talking of memories, the FT-890 has thirty two multi-function memories. A variety of scanning options is also provided.

Let's take a look around the front and rear panels to see what's available for the keen operator. In the top left hand corner are the MOX, VOX and main DC power switches. Under these is a standard 6.5 mm headphone socket (stereo compatible) and the eight pin microphone socket. The meter function switches are placed under the meter and in addition to the "S" meter function on receive, give transmit readings of ALC, power output and SWR. Unfortunately there is no metering of compression level with the RF speech processor on.

Under the meter selection buttons are five buttons which operate with a very soft but positive feel. These are for processor on/off, AGC fast/slow selec-

tion, IPO in/out, attenuator in/out and RPT/T. A couple of these obviously need explaining. The IPO (Intercept Point Optimisation) switches the receiver RF amplifier in and out to give improved intermod characteristics. The attenuator switch inserts a 12 dB pad into the receiver input. The RPT/T enables the repeater offset and an adjustable sub-audible tone for use in the FM mode on ten metres. Four rotary controls at the lower left are for microphone gain and transmitter RF power output. This latter control accurately sets the output of all modes from the full 100 watts down to a watt or so which prevents overdriving a linear amplifier or transverter. The next pair of controls is for receiver RF gain and receive audio gain. The vertical row of buttons to the left of the main tuning control select the various modes (LSB, USB, CW, AM and FM). There is no Morse code identification provided.

At the top right hand side are the selection buttons for VFO A/B, VFO A = B and split operation (transmitting on one VFO and receiving on the other). Three buttons are for memory operation and two for the automatic antenna tuning operation.

To the top right are four buttons, the two smaller for Ham/Gen and clarifier on/off. The Ham/Gen selects either consecutive amateur bands or full general coverage reception. In the general coverage mode, up/down stepping is in either 100 kHz steps or with the "Fast" function selected down in 1 MHz steps.

The rotary controls below are for noise blanker level and squelch (left hand side). The on/off button for the blanker is just above left of the control and, like the meter switches, it illuminates when operated. The right hand concentric pair are for notch and IF shift. Again the notch "On" button is illuminated when in use. The clarifier control is on the far right. This uses an optically encoded tuning system and covers a range of ± 9.9 kHz. To the left of the clarifier are the up/down buttons for band changing and memory selection.

The front panel has a very clean layout with all controls well spaced, easy to get at, and with the best status indicators I have ever seen. The rear panel has the VOX controls, compression level control and inputs for a phone patch and external ALC and outputs for external speaker, data in/out plus connectors for the DVS-2 digital voice recorder, external ATU, band data output to the Yaesu FL-7000 linear amplifier. There is also an output for CAT control data, and a key

input. A standard SO-239 connects to the antenna and a six pin plastic socket for the 13.8 volt DC input.

There is also a relay connection via a phone connector to control a linear amplifier such as an FL 2100.

The FT-890 On The Air.

The FT-890 operates from 13.8 volts only, so requires an external DC power supply with a twenty ampere peak current rating. At long last, Yaesu now fit a standard six pin plastic DC connector of the type that has been used by Kenwood and Icom for many years. Let's hope that the old Jones type power connectors have gone for good. The only thing they did well was scratch cabinets with their metal locating plates.

Luckily I have a couple of old (and very good) Yaesu FP-707 power supplies in the shack already fitted with the new six pin DC connectors. So plug it in and off we go. Well, no! Nothing! A quick check shows there is plenty of DC both from the power supply and at the output of the plastic connector but still nothing from the 890. To make a long story short, I found (after quite a while) that the MOX switch on the transceiver panel had been pushed in without my noticing. Release it and everything comes to life, but no mention is made of this in the otherwise excellent instruction manual. Watch out for this safety feature.

As is usual these days, many functions can be set on power-up. Yaesu call this "Power-up customisation and button combination settings", which actually takes longer to say than it takes to enable your function. Some of the things you can set are: 10 Hz or 100 Hz digit displayed, fast button press on/off or active only while pressed, set scan-resume mode, select lock mode where only the tuning control is locked or all operating buttons plus tuning knob is locked. There are in all ten functions that can be "customised" with the power-up feature. In a similar way, while the rig is actually on, several functions can be set by holding the "fast" button plus one other control. Some of these include: The beeper audio frequency can be set anywhere between 220 and 7000 Hz. I found 1 kHz about right. You can set the digital display to any one of eight different brightness levels, however the intensity of the "S" meter does not change. The transmitted audio response can be tailored to suit different voices and microphones (more about this later), the tuning rate can be set, the CTCSS tone for 10 metre FM can

be selected and a memory skip function can be initiated.

The tuning control is superb. It has a very free action similar to the FT-1000 and 990 transceivers. The meter is brightly illuminated and calibrated for "S" meter, power output in watts, ALC action and SWR. The SWR reading is automatic and does not require forward setting. The three last functions are available on transmit only of course, and are selectable via three small push buttons under the meter which illuminates when selected. A very nice effect.

Back to the tuning control. As well as the excellent mechanical action, the FT-890 has a direct digital synthesiser. This results in very clean tuning with an almost total absence of bleeps and clicks. This is particularly noticeable on AM where the 890 tunes like an analog VFO receiver.

"S" meter action is good and produced an S9 reading with an average input of about 60 μ V. However around 86 μ V input was required on 28 MHz. AGC action is well controlled on SSB with the slow position selected but there is no provision to switch the AGC off. With the "IPO" selected, the sensitivity drops about 10 dB and a further 12 dB with the attenuator selected.

Receive audio quality from the internal speaker is very acceptable and with a good quality external speaker plugged in, excellent. Audio power output was measured at 1.6 watts with 10% distortion and a four ohm load. With an 8 ohm load the output dropped to 1.2 watts. The notch filter was effective, but as usual with notches operating at the IF, it had quite a detrimental effect on the audio quality. This is caused by the wide notch at the top of the response curve which removes a large slice of the wanted audio. The IF shift was useful in helping to reduce the effects of adjacent QRM. I like the action of the clarifier, however it lacks two important features. Firstly there is no "Clear" button to return to the normal frequency readout to show the amount of offset. The main readout moves in sympathy with the clarifier, but you have to hit the transmit button to see where you have come from!

I thought receiver selectivity on SSB was good. It can however be improved with an optional crystal filter. If you rag-chew on 40 and 80, you won't need this, but a keen DXer might prefer the extra selectivity of the optional filter. Optional CW filters with 500 Hz and 250 Hz bandwidth can also be installed.

Frequency readout is selectable to either 10 or 100 Hz resolution. The 10 Hz digit is smaller than the rest of the display, and disappears when the memory mode is in use.

Frequency stability is excellent and did not vary by more than about 20 Hz or so during the period of our tests. If you are very fussy, this stability can be improved by installing the optional TCXO-3 temperature compensated crystal oscillator, but you won't need to be very fussy.

The automatic ATU will match up to about a 3:1 SWR. It was somewhat slower in action than many available these days, sometimes taking 20 or 30 seconds to find a suitable match. However, once a band setting is stored, it recalls the setting very quickly. There are 31 memories for the ATU — very handy when hopping from band to band.

The transmitter power output was measured at an average of 110 watts output over all bands with current drain averaging 19 amps (at 13.8 volts). With a reduction of voltage to 11.5 the power output dropped to about 95 watts with the current remaining about the same. Initial transmit quality reports were somewhat on the bassy side. However, this was easily resolved using the RF processor shift which is a unique feature of this transceiver. As received the RF processor shift was set at the zero point. This was then set to +200 Hz with a dramatic improvement in quality. Naturally this will depend on the voice and microphone you use. The RF speech processor worked very well and was markedly superior to the usual audio based processors used in many other transceivers in this price class. I set the rear compression control to about the 10 o'clock position. All of our tests were carried out with the supplied MH-1 hand held microphone.

The power output metering was found to be very accurate, but it was hard to get a meaningful reading on the SSB speech peaks. I would like to see the meter slowed down to somewhat overcome this. On CW the keying was clear and free of clicks and of course the FT-890 is fully packet compatible.

The FT-890 Instruction Manual

The FT-890 Instruction Manual is presented in a similar form to those supplied with the FT-1000 and FT-990. In other words it's very well presented. The mistakes that I noted in the FT-990 manual have been corrected and in fact a hard



look failed to find any errors at all. The print quality of the manual is the best of the Big Three manufacturers by far and the touches of colour really make things stand out. Five full pages are devoted to the CAT system computer control.

Again there is no technical description of the transceiver in the manual. No doubt this is well covered in the workshop manual when this becomes available. However as a general instruction manual I will give it almost top marks — nine out of ten. A couple of pages of circuit description would take that up to full marks.

Conclusions

The performance of the FT-890 is, in a word, excellent for a transceiver in its class. I feel that the only thing that Yaesu have left out is a clear button for the clarifier. With this added, a clarifier is almost as good as a second receiver. If you are a keen DXer then the optional SSB crystal filter would be a must but nonetheless, in standard form the transceiver is at no disadvantage to its main competitors.

Our review transceiver was kindly supplied to us by Dick Smith Electronics to whom all enquiries should be directed.

The FT-890 will retail at \$1995 which includes the MH-1 hand microphone. The optional automatic tuner (ATU-2) will be \$429.

Shepparton Balloon Found

David Mann VK2OC
"Mundaroo"
Tumbarumba 2653

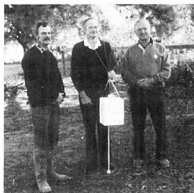
SHEPPARTON AND DISTRICT Amateur Radio Club launched a "voice weather balloon" on Saturday 23 May 1992. The launch created much excitement among local amateurs in reporting its signal, and tracking it. The flight proved most successful, and provided more than 100 reports, with the best distance being more than 1200 kilometres.

The prevailing winds took it in a north-easterly direction. The highest recorded reading was at 65,000 feet over Wagga. At this altitude the balloon is believed to have burst, causing its parachute to open.

The airborne package floated to the ground and landed approx 1 km from the road, in a pine plantation on the Lower Bago Road, near Courabyra, NSW. Its resting place eluded keen followers for almost 72 hours, and on Wednesday 27 May 1992, David VK2OC and XYL Sue, together with Trevor VK2ACZ and Terry VK2ETR spotted the missing package with binoculars.

With Sue standing atop a four wheel drive, she directed by radio the male contingent, who had made their way into the plantation carrying a white flag on a stick (obviously to beat the package into submission once located!).

When located, the balloon remains, radar reflector and parachute were in one



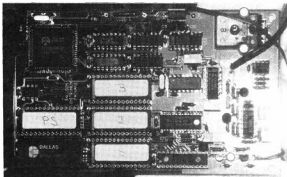
David Mann VK2OC, Terry Reeckmann VK2ETR and Trevor Headless VK2ACZ proudly display the balloon transmitter and parachute after its successful recovery.

tree, and the radio package in another, in good condition and undamaged.

The \$100 bounty for the return of the package was increased to \$200 by Peter VK3MU in a spontaneous gesture. Although the main purpose of the exercise was the flight itself, the recovery simply adds icing to the cake, and the organisers of the Shepparton and District Amateur Radio Club have expressed their grateful thanks to the recovery team, and all who participated in the activities.

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**Support the
WIA in order to
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amateur radio
frequencies**



The main control circuit board of the Shepparton Balloon Instrument Package Transmitter.

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Random Radiators

Ron Cook VK3AFW
Ron Fisher VK3OM

This month, we intend to look at a few more wire antennas that are held in high regard in some circles. Then a new version of our favourite antenna coupler, the "Z" Match. Is it as good as the old one or not?

BUT FIRST A NEW LOOK at an old antenna, the extended double Zepp. One of the Rons has just put one of these up for the 40 metre band and is getting excellent results on all bands from 80 through 10.

It all started when an 80 metre dipole fell down in a storm. It was decided to extend it before putting it up again. The first thought was to make it a full 160 metre dipole, but as an improved signal into Europe on 40 metres was needed, it was decided to make it into an extended double Zepp.

As the original 80 metre antenna was centre fed, it was decided to retain this feature and just extend each half of the dipole. The overall length used is 55 metres (not critical) and it is fed with 33 metres of 300 ohm open wire feeder. With either the "Z" match or the Johnson Matchbox antenna tuner, the antenna tunes up very easily on all HF amateur bands. Performance seems better overall than the 80 metre dipole and on 40, the 3dB gain puts a very competitive signal into Europe.

Of course as we have mentioned in the past, a half size version works well on 20 metres, and all the other bands as well although performance on 80 will be down a bit as the overall length is shorter than a half wave.

While on the subject of extended dou-

ble Zepp, we came across an interesting variation on the theme in an old Short Wave magazine. By the way, these are a wonderful source of antenna information especially those around the late 1940s to the late 1950s. We have a good collection of these and will be quoting from them over the next year or so. The November 1949 issue has an article by G3AEN showing how a 20 metre extended double Zepp can be end fed. A rather unusual situation, but one which could be most useful in many locations. In addition to this, the author has devised a method to change the directivity of the antenna. All of this has been achieved in the space of only 90 feet by 25 feet, an apparently English back yard.

The feeder system is rather unusual these days but not so uncommon in 1949. A matched 300 ohm balanced feeder is provided for single band operation. In those days it was not unusual for transmitters to have a 300 ohm output. Matched 50 ohm coax feeders were still a few years away. To use this antenna today, a balanced line of about 300 ohms impedance to an ATU of the "Z" match type would be fine and would also allow all band operation. The closed stub on the feeder would need to be removed for all band operation, but could be retained for 20 metres only.

After using the basic antenna for an ex-

tended period of operation, G3AEN decided he needed some radiation off the end of the antenna. To do this a half wave element for 20 metres was added to the main radiator a half wave length from the feeder end. If you have enough space to run this in a straight line so much the better. G3AEN folded the element to fit his available space.

Let us now quote some of the author's remarks which show his design parameters.

"An extended double-Zepp aerial which gives a gain of 3dB in its preferred direction seemed to be the most suitable choice, but no trace of any suggestions regarding end-feeding could be found. The radiation pattern produces an arc of approximately 50 degrees, and is covered on each side of the aerial. In addition there are four minor lobes making an angle of 35 degrees with the line of the wire. The increase of 3dB over a dipole in its optimum direction makes a worth while improvement, especially as it is accompanied by a decided reduction in QRM from the unfavoured direction.

Being a true to type amateur, naturally this state of affairs could not be considered final, and attention was turned to the original problem of raising DX off the ends of the aerial. A few hours thought resulted in the idea of an additional half wavelength at right angles to the main aerial. From the estimated radiation diagram this would achieve practically omnidirectional propagation without reducing the gain from the original aerial. It is true that the advantage of the reduction in QRM would be lost, but more value was placed on being able to work in all directions than the ability to receive all signals in the clear".

Worth a try? We think is certainly is. If you try one, let us know your results and thoughts. We would like to compare notes.

A New and Better "Z" Match

In the March 1992 issue of Break In, the magazine of the NZART, a new design of the popular "Z" match ATU was described. This uses just one tapped coil with a single output coupling link. At the moment we are in the process of building up a prototype to check its operation. The Break In article is largely a theoretical discussion with little practical information on how to build one. Let us look at some extracts from the article and then some thoughts from ATU guru Lloyd Butler VK5BR.

But first over to T S Seed ZL3QQ as published in Break In.

The author uses a 300 pF coupling capacitor to the top of a coil 14 turns spaced over 7.6 cm on a 5.7 cm former, and a twin tuning capacitor of 240/28 pF. The secondary winding is nine turns inter-wound with the primary, tapped at two and five turns. This allows two, three, four, five, seven or nine turns to be connected to the load.

The genesis of impedance matching circuits is the "L-section" network of which there are four arrangements. One of these uses a series capacitor and a shunt inductance. Such a circuit will match a high resistance R_{in} on the load (inductance) side to a low resistance R_{in} on the generator (capacitor) side with a Q given by

$Q = \sqrt{(R_{in}/R_{out})-1}$ and component values $X_c = R_{in} \times Q$ and $X_L = R_{out}/Q$.

If Q is equal to or less than one either (1) the source and load may be interchanged or (2) a step-down secondary winding may be placed on L.

To cover a range of operating frequencies both the capacitor and inductance must be variable. Variable capacitors are commonly available, while an inductance may be made "variable" by placing a capacitor Ct across it by tuning this parallel combination to the low side of the operating frequency. This, and the "secondary winding" technique is what is used in the Z-Match — also in the Gamma match on beam antennas.

The conventional Z-Match shown in Figure 1 uses two coils Lh and Lh and two capacitors Ct, Ct, which here are taken to be ganged, variable and of equal capacity, to form what may be thought of as the "variable" inductance of an "L-Section" network.

This combination exhibits parallel resonance at two different frequencies F_{lo} and F_{hi} with a series resonance F_{res} between them for any particular setting of the twin capacitor Ct.

This circuit is known to have been described as early as 23 March 1918 in Circular C74 of the Bureau of Standards, which includes reference to the use of the series resonance condition to suppress unwanted harmonics!

Now over to Lloyd Butler VK5BR for his comments.

The circuit principle does differ from the original Z-Match circuit principle in one important aspect. In the original circuit, the unused coil floats and is not coupled to the antenna. In the single coil version, both tuned circuits are coupled to the antenna. I wonder what side effects occur if the upper tuned frequency happens to be harmonically related to the operating frequency when the lower frequency circuit is predominant for opera-

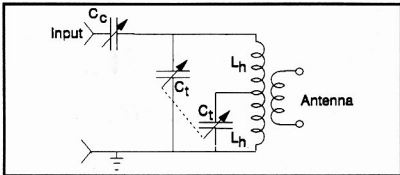


Figure 1.

tion. Could it encourage harmonic radiation? I bear in mind that in tapped coil systems, the unused turns are normally shorted out to prevent stray resonances in the unused section of the coil.

I note that whilst the writer has established a detailed theoretical base for the design of the dual resonant tuning system, he has avoided detailed discussion on the output coupling system. In my May 1989 AR article, I went to lengths to explain how the air coupled coils gave a coupling coefficient considerably less than one and this produced a very useful effect. For a load resistance lower than a certain critical value, there is a fold back effect in which decreasing load resistance actually increases the resistance component reflected to the primary of the coupling transformer. This is the reason why the Z-Match tuner can match right down to low impedance not otherwise possible with a network of series C and shunt L as used in the Z-Match.

I don't know whether it is a documentation error but, if correct, the writer has a reference to the Z-Match type of tuning system in published information as early as 1918. This is very interesting as it puts it back into the spark transmitter era.

The writer also refers to the series

resonant frequency which can be used to suppress harmonics. Whilst I followed through all his reasoning in the article, I did not understand how that could be set to do that job over the tuning range of the device.

The last point is that no information is given on just what performance has been achieved in using this particular design. The question must be raised on how it performs by comparison to the two coil circuit.

It seems to me that the only reason we need two tuned circuits in the Z-Match is that one won't quite cover the complete range of 3.5 to 28 MHz. I have the feeling that we could achieve what we want using the circuit in Figure 2 — a single tuning capacitor (not split stator) in parallel with the primary of an air coupled (low coupling coefficient) output transformer. To extend the high frequency tuning range, a switch is provided to short out some of the primary turns. The more I think about it, the more I am convinced that this circuit (more straightforward than the Z-Match) is worth looking at.

As soon as we have our model up and working the results will be published. Keep tuned in.

The two Rons.

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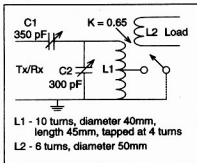


Figure 2.

Remember to leave a three second break between overs when using a repeater

How to Write For Amateur Radio Magazine

Bill Roper VK3ARZ
Publisher, Amateur Radio magazine

IT'S EASY TO WRITE FOR *Amateur Radio* magazine. Hundreds of amateurs have already done it. Few of them are professional writers. All get a lot of satisfaction out of hearing their fellow amateurs say they enjoyed reading their article in the latest issue of the WIA journal.

Just about anybody can write. Some can turn an elegant phrase, while others just explain what they have in mind and keep right to the point. Practice develops skill in writing, just like anything else you do. The more you write, the easier it gets and the better it is.

The Subject

Most amateurs love simple equipment and antenna construction and design articles. While most of us will not actually build the project we often follow the construction in our minds and enjoy reading about it. However, since *Amateur Radio* magazine has more than 10,000 readers each month, just about any project will be constructed by at least 10, and sometimes hundreds of fellow radio amateurs.

It pays to be extremely careful in checking your article, particularly circuit diagrams, for any errors, or the mail will pour in.

If you are experimenting in a new field, you may want to write about it and let others know what you are doing and dis-

covering. Bear in mind, however, that you are writing for a wide range of amateurs, from beginners to experts. Gear your article as close as possible to the "entry level" amateur as possible. After all, this is amateur radio, not the Proc IREE.

While the emphasis in *Amateur Radio* magazine is for technical articles, readers also like to read about any other area of amateur interest. A visit to a particularly interesting DX location, perhaps a local event of significant interest to radio amateurs. Most amateurs have at least one good story in them.

The Plan

Before you start to write the article, outline what you want to say. Remember the old rule: *Tell them what you are going to tell them; tell them; then tell them what you've told them.* Or, in more formal language, introduction, body, summary.

Follow this format for construction articles: *introduction, theory, construction, alignment and adjustment, and summary.* The title and opening paragraph are particularly important, as are diagrams and photographs. You win or lose most readers right at the beginning.

When writing, remember that *Amateur Radio* magazine is an informal, hobby magazine and that you are writing for friends. Don't be a stuffed shirt. Go

lightly on impersonal third-person terms, such as "the author". It's in order, however, to occasionally use the first person "I".

Also use direct sentences whenever possible. They deliver your point more forcefully. "I fastened the nut" is better than "the nut was fastened". Write naturally, in short simple sentences, starting a new paragraph with each new thought. Avoid unnecessary abbreviations. Use subheadings as signposts for the readers.

Mis-spelling is easily avoided. Many of you have word processors with spelling checkers, and *hard copy* dictionaries are cheap. Look it up!

Minimise maths. It's not often necessary in *Amateur Radio* articles, and it scares many readers. While most readers can use high school algebra and trigonometry, they don't want to. They prefer practical projects, designed and ready to build. Graphs are next best. Maths is last. Even engineers prefer pre-designed circuits, if only as a starting point for their work. Use maths only where it is vital. If a mathematical derivation is necessary, show only the steps which introduce fresh logic. Steps of a purely Mathematical manipulation nature should not be shown.

Abbreviations and Symbols

The editors of *Amateur Radio* magazine use the abbreviations as detailed in the Australian Government Publishing Service (AGPS) *Style Manual*, such as: Hz, kHz, MHz, GHz, μ F, pF, mH, H, W, mW, μ V, V, mV, kV, A, mA, μ A, dB, km, Ω , k Ω , M Ω . Do not use full stops or pluralise the abbreviations. Separate them from the number: 10 MHz, not 10MHz. Modes of emission, and acronyms in general, are capitalised: AM, FM, CW, SSB, RTTY, ATV, RF, IF, DC, AC, RMS, VFO, AGC, etc.. Though the text flow should be informal, keep away from *hammy* abbreviations in your articles such as xtal, XYL, xmtr, xfmr, etc.

Greek letters can be created with most word processors by holding down the Alt key while pressing the numbers from the following chart on the keyboard numeric key pad.

α	229	β	225	π	227	Σ	228
σ	224	μ	230	ϕ	232	θ	233
Ω	234		235				

Avoid footnotes wherever possible. References in the text are easier to read. Do not forget to give credit when you borrow an idea from someone else. This is important both ethically and legally.

Diagrams, Illustrations and Schematics

Put all drawings on separate sheets of paper. Never put them in the text. If the standard of your drawing is not good enough to be published as is, we have an excellent draftsman who will redraw it for you. Be sure your sketches are complete, neat and readable. Put parts values on the schematic and include a separate parts list. Use terms R1 and C2, etc. Label the drawings numerically, for example Fig 1, Fig 2, etc. At the end of your article text, list the figures with a caption by each one. Put your callsign or name on every sheet of paper you submit.

Photographs

Good photographs can make all the difference in the appeal of an article. You may be able to find a good amateur photographer who will be glad to do the job in exchange for a credit line in your article. Although colour photographs are the most popular today, quite often they do not reproduce well in black and white. A good quality black and white print will generally reproduce better in the internal pages of the magazine than a colour print. Standard 15 x 10 cm prints are satisfactory.

You will want an overall photo of the project, plus relevant views that will be helpful to the reader who wants to duplicate your efforts. Label each photo clearly with a letter: Photo A, Photo B, etc. At the end of the article, list photos along with captions describing each photo.

If you have a colour photograph that you want the editors to consider for the front cover of the magazine, take note of the vertical format requirement for the front cover, and send us a good quality print. Again, a standard 10 x 15 cm size print is satisfactory. We can also use positive transparencies.

PC Boards

If your project includes a PC board, send a positive of the board with your article. Separately sketch out the component layout. If the positive is not the same size as the board, be sure to tell us.

Software

Accompany all program listings with text explaining the logic and uses of the program. Include a flow chart whenever possible. Send all program listings on an IBM format floppy disk, but make sure to include clean dark hard copies of all listings. Use a fresh ribbon and a letter-quality printer for your listing. If you are writing in an assembly language, make sure the listing and disk contains the source code. It is considered poor practice to reproduce pages of code listing in the magazine. A preferred approach is to publish a description of the logic and function of the program together with an address from which hard copy or a disk can be obtained.

Manuscript

Send a covering letter itemising what you have included in the submission, such as manuscript, schematics, photos,

captions, etc. Provide a brief biography. Readers like to know a little about the author of an article.

When submitting hard copy, use regular A4 typing paper and double space the text, leaving at least a one inch margin at each edge. Number the pages, and put your callsign or name on each page. Do not type titles, subtitles, or text in all capitals. Always keep a copy of your work.

If you submit a hand written manuscript, please ensure that it is legible. Printing rather than writing may be better.

Submission

You can submit your article in several ways. We prefer it electronically by sending it to us on an MS DOS formatted floppy disk, 5 1/4 or 3 1/2 inch. We have the ability to translate most word processors, but would prefer the text to be in either WordPerfect or ASCII. If you use another word processor, please tell us the name and version number.

Send your article to: Amateur Radio, PO Box 300, Caulfield South, VIC, 3162.

The editors will arrange publication of your article at the earliest possible opportunity. Be prepared to wait up to six months, however, before you see your work published in the magazine. It can take that time to edit and prepare your submission for publication, and place it in a particular issue to ensure a balanced magazine.

Acknowledgments to Radio ZS. This item is based on an article published in the October 1989 issue of Radio ZS, and has been adapted to Australian conditions.

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JENLEX FILTERS

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The range of JENLEX 50 Ohm helical filters is designed to reduce or eliminate pager interference on the 2 metre band. They are compact, weatherproof filters suitable for indoor or outdoor use.

• HNF1: is a 2-stage filter rated at 100 Watts, with a notch depth of better than -40dB at 148.6MHz and an insertion loss of 1.7dB at 147.600MHz.

Price \$175

• HNF2: is a 4-stage filter rated at 50 Watts, with a notch depth of better than -40dB at 148.6MHz. Maximum depth of notch is -80dB with narrow band width.

Price \$175

• HNF3: is a 3-stage filter rated at 50 Watts. Maximum depth of notch is -55dB with a narrow bandwidth.

Price \$150

• HNF4: is a 2-stage filter rated at 10 Watts with an attenuation better than 30dB at 148.600MHz and an insertion loss better than -2dB at 147.600MHz. BNC connectors are standard for this model, small enough to be used on a hand held.

Price \$150

All prices are ex-works, including Sales Tax, and subject to change without notice. Packaging and Post is \$10 on all units. Notch frequency and depth can be adjusted at the factory at the time of order to suit the user's local needs.

Send for an illustrated leaflet and detailed performance curves.

122 Wanda Street, Mulgrave, Victoria, 3170. Phone: (03) 548 2594. Fax: (03) 547 8545.

VK Caltenna Update

Clive J. Cooke
VK4CC
P.O. Box 161
BRIDIE ISLAND QLD 4507

Since writing about the VK Caltenna (August 1991 AR), additional experiments have caused me to modify my views regarding the transformer design and the use of an earth system for a vertical or end-fed antenna.

THE TRANSFORMER connections currently in use are as indicated in figure 1, in which it will be noted that the 50 ohm resistor is now connected directly across the feed line socket, the lead to the resistor from the inner conductor of the feed line being as short as possible as in a dummy load. The earthy end is not as critical re the length of the wire. To clarify some enquiries, the winding wire size does not seem to be critical. I use mainly 16 gauge B & S or thereabouts enamel covered on a ferrite toroid having a μ near 130; though once more this does not seem to be critical for the power we are authorised to use as saturation is unlikely.

Before winding the 11 twisted turns ensure that the ferrite is first covered with some plastic electrical tape to reduce the capacitive effect of the ferrite on the winding. The final test for a good winding should be on the bench using a SWR meter which should result in a substantially flat SWR on all bands.

Too many turns or too tight a twist and the higher frequencies will suffer. Too few turns and the lower frequencies are affected due to insufficient inductance.

Note that the centre tap of the transformer is joined to the braid of the feed line which should be earthed at the base of a vertical or end-fed sloper or inverted vee for improved results.

It is recommended that if possible, a minimum length of wire of 51 feet be used; preference being for about 100 feet

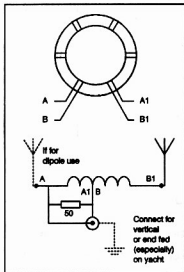


Figure 1.

or more as an inverted vee. Relative to the centre tap (and earth), each side of the auto transformer has a 1:1 ratio relative to the other side. However if the transformer is employed in matching to a DIPOLE (which need not necessarily be the same length on each side of the transformer), a 2:1 voltage or 4:1 impedance ratio exists between the two ends and the feed point connections.

One USA manufacturer suggests 20 feet on one side and a minimum of 50 feet on

the other side for his unit (which costs up to US\$1,000). A Japanese manufacturer marketing a similar device to the VK Caltenna since I wrote my article for AR, suggests that the end-sloper would be ideal for use on a yacht from the mast to the backstay (and a good earth). For larger vessels the centre-fed unit may be used (Cost A\$495-00).

As previously stated, I am using a 33 feet high aluminium vertical which is energised by the VK Caltenna matching unit, now making effective use of a seven feet long copper clad earth stake connected to four 33 feet wire radials under the antenna. The wires are at spade depth below the lawn. Although I had 3.5 MHz contacts and some 1.8 MHz contacts with that relatively short antenna, I was not really happy with the results compared to the temporary longer wire antennas I have tried. In an attempt to overcome the problem I connected a coil of about 20 close spaced turns in series with the base of the antenna to earth to resonate the entire system on 3.6 MHz, as confirmed with a Grid Dip Oscillator placed inside the coil. Having thus resonated the system I tried connecting the VK Caltenna matching unit in series at the "earthy" end of the coil. This certainly improved the 3.5 MHz operation but the higher bands went dead ... no wonder I get asthma! I then elected to feed across the coil with the matching unit and what do you know, IT WORKED!! (see figure 2). Not only did I then have improved 3.5 MHz operation, but so also for reasons

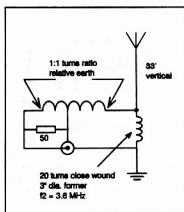


Figure 2.

unknown were the higher frequencies improved. It seems that while the coil acts as a means of matching in combination with the transformer on 3.5 MHz, the inductance of the coil is sufficient on fre-

quencies above 7 MHz to act as an RF choke, thus preventing signals from being by-passed to earth through it. Comments are often made about the improvements and I have been having regular contacts with overseas friends, including JASAI (who visited me as stated in the original article). He used to dodge the Japanese made bombs I aimed at him, but as I told him, I was never too sure if the bombs would blow up under me before they reached his foxhole. We have been friends now for over 40 years.

Footnotes

VK4CC advises:

1. 300 watt 50 ohm resistors are available from Stewart Electronics, 44 Stafford Street, Huntingdale Victoria 3166. Their stock number is RA38.
2. The following letter reprinted from "CQ" for August 1985 will be of interest to followers of the "CAITENNA" articles:

The "Delta Dummy"

Editor, CQ:

As the "originator" of the "Dummy Dipole" and the "Delta Dummy" (see QST, April 1985 issue, P.51),

I particularly enjoyed Lew McCoy's commentary on the "DLA" antennas in the May 1985 issue of CQ. I would like, however, to point out that the most successful edition of my DLA was the full-wave 80 meter "Delta Dummy" rather than the dipole configuration. This is a triangular 260 foot long horizontal loop fed with RG58U and terminated at the antenna feed point with the 50 ohm non-inductive resistor. This configuration seems to work as well as a resonant half-wave dipole in 75-80 meters and is, of course, useable from 1.8 to 144 MHz.

In the dipole configuration with two 50 foot wires across the 50 ohm resistor, performance is pretty good on the lower frequencies but falls off on the higher frequencies, as Lew indicated. I'm still not certain that using resonant antennas in DLAs will improve performance, since the two 50 foot elements are not resonant on, nor harmonically related to, the commonly used ham frequencies, and, apparently, were chosen by commercial manufacturers of similar systems for that reason. I am quite convinced that when a full-wave loop is used on the band of choice, it will approximate the performance of a resonant dipole on that band and will be useable with an almost negligible SWR on all other ham bands. My suggestion therefore, would be to use a full-wave loop on the band where most operating is done — i.e., 260 ft. for 3.8 MHz, 130 ft. for 7.2 MHz, 65 ft. for 14.2 MHz, etc. The loop can be square, round, or triangular, depending on the "geography" of one's backyard, and can be used as a clandestine or

hidden antenna run around the perimeter of an attic or roof. The beauty of the system is that it will present a very low SWR to a solid state transceiver on all bands, although, as freely admitted, there will be some loss of RF energy in the resistor, depending upon antenna impedance, the frequency used, and several other factors mentioned in my correspondence with Lew.

In any case, I was very pleased to read Lew's article in CQ. I've gotten more fun out of my "invention" and reaction to it than I've had in my almost 50 years as a ham.

Mort Sievin, K3FGB

VK4CC says: "... It will be noted that the letter throws some light on the use of an antenna such as that which I have described By incorporation of the transformer I have facilitated the use of shorter antennas than those advocated by K3FGB and am currently finding that a 50 ft. horizontal end-fed version is working satisfactorily from 3.5 MHz to 30 MHz"

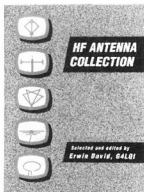
ar

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BOOK REVIEW

HF Antenna Collection

Selected and Edited by Erwin David, G4LQI



This is the first edition of a new RSGB publication and it is a worthy addition to the impressive list of volumes published by them.

Antennas have always fascinated me and I believe that most radio amateurs have a strong interest in them. After all, they are the key element in any station. No antenna equals no contacts equals no fun.

The articles in this book are restricted to the frequency range 1.8 to 30 MHz and most have been published in Radio Communications between 1968 and 1989. In addition, a most useful set of appendices covers related topics such as feeder characteristics, wire sizes, stock sizes of tubing, lightning arresters and cores for baluns and inductors.

The book begins with a few words on antenna basics by none other than Pat Hawker, G3VA, followed by some advice on antenna and AC mains safety.

Chapter One covers single element wire antennas. Our old friends the Windom, G5RV, and trap dipoles are all there along with a range of others. G4ABS describes a very interesting multi-band antenna for restricted space that should give a very good account of itself compared to full size antennas.

Chapter Two describes a range (I was tempted to say an array) of horizontal beams. More old friends including the VK2ABQ and its derivative 2 element tri-banders. All are inexpensive and intended for the home brewer.

Chapter Three is about single-element vertically polarised antennas. Loaded verticals, matched towers and mobile whips feature here.

Chapter Four details vertically polarised beams, including one for 160 metres for suburban lots.

Very small transmitting and receiving only loops feature in Chapter Five. Recently I have been hearing and working stations using loop antennas, so this was a particularly interesting Chapter.

All antennas need a feeder and these and the mysterious Smith Chart take up Chapter Six.

Those of you with computers have probably dabbled with computer modelling of your favourite antennas as an alternative to on-air testing. Articles by Peter Dodd, G3LDO, and others address these topics in Chapter Seven.

Once you have built your antenna, in most cases you will want to get it off the lawn, well if you don't, the XYL definitely will. Chapter Eight describes a very solid DIY mast, how to get a 60 ft pole upright without calling in the regiment and how to build the right sort of kite.

Finally, Chapter Nine describes a range of useful measuring instruments for the antenna system.

The 233 pages of this book are packed with practical information on antennas, although being an RSGB publication I was surprised it wasn't about aerials. In this brief summary, I haven't been able to fully cover every topic, however, I recommend this book to anyone who is building antennas, is thinking of building an antenna or who might one day think about building an antenna. It makes good reading for anyone interested in antennas.

The book is on sale at the usual outlets, this copy being kindly supplied by Divisional Bookshops whose price is \$39.60 to members, and \$44.00 to non-members.

Reviewed by Ron Cook VK3AFW

ar

RAAF Radar — Fifty Years Old — 1992

Celebrations at Bendigo

**Phil Williams VK5NN
24 Dodson Road
VICTOR HARBOR 5211**

Over 500 ex members of the RAAF and WAAAF World War II Radar Branch gathered at Bendigo from 21st March to 26th March 1992, to celebrate the 50th Anniversary of the occasion when Radar Station No 31 at Driptone Caves north of Darwin detected Japanese bombers approaching over the Timor Sea at 11.30 AM on 22nd March 1942. The raid was intercepted by US Kittyhawk fighters and turned back.

THIS RE-UNION was organised by a national committee set up by the Air Defence branch of the RAAF Association in Sydney, under its president Wai Fielder-Gill, who served on radar stations in both Queensland and the Admiralty Islands. It took three years from the previous gathering in Canberra in 1988 to find that Bendigo, where numerous ex-radar people live, could host the re-union. The local committee under Alex Culvenor did a wonderful job in surveying the local facilities to cater for the delegates from all states, and several from the USA and New Zealand.

The father of Radar (or Radio Location as it was then called) in the RAAF was Squadron Leader AG (George) Pither, a permanent RAAF officer, who studied the art in England during 1940/41. He returned to Australia with the intention of training specialists for Britain. However, the Pearl Harbour bombing changed everything, and his first direct

recruits, mostly professional radio engineers, physicists and some suitably qualified radio amateurs, found themselves posted to Malaysia and Singapore installing British Radio Location equipment.

After the loss of Singapore, much of this equipment found its way to Australia, to provide our first stations, but several of the men were not heard from again. Others remained as Prisoners Of War. Australian designed equipment suitable for tropical use and of lighter construction for the island campaign was soon developed by the CSIRO and NSW Railways. Some of it was supplied to US forces for use in Pacific Island landings.

George Pither was a radio amateur (VK3VX), and after he retired from the RAAF in the 1960's, supervised the conversion of the Royal Flying Doctor Radio Network from AM to SSB. He retired with the rank of Air Commodore, but did not live to enjoy this 50th Anniversary at Ben-

digo. A little known facet of George Pither's career in the Air Force was the period he served as Superintendent, Woomera Rocket Range — circa 1951 to 1954.

The radio amateurs who are all ex-radar men attending the re-union were VK2AYU, VK3SW, VK3DSW, VK3DSP, VK3EJQ, VK4LZ, VK4OD, VK4AGT, VK4QS, VK4VH, VK5RV, VK5KTZ, VK5UL, VK5NN, VK6AMB and ZL4JL.

A special event station VK3FRA (Fifth Radar Anniversary) was organised by Wally Cameron VK3WMC of the Bendigo Club, with special QSL cards for all contacts with the Bendigo station during 1992.

Sunday 22nd March was the actual anniversary day, and was celebrated with a civic reception at the Bendigo Town Hall. The celebrations also included a march led by serving personnel and the RAAF band, a service at the Cenotaph conducted by the Senior Padre followed by a wreath laying ceremony, and then a luncheon at the Town Hall. During the luncheon, a painting by Lae Fielder-Gill of the No 31 Radar Station at Driptone Caves was presented to Wing Commander Peter Bevan, the Commanding Officer of No 41 Air Defence Wing at Williamstown.

On Monday 23rd March, there was an exhibition of paintings by well known artist Frank Harding, entitled "They flew for the King". This series depicted RAF and RAAF planes and situations which were of a major interest to all present.

The official dinner was held on Monday evening with the Chief of the Air Staff, Air Marshal Ray Funnell (CAS) as the guest of honour. Other guests included senior officers from the technical areas of the Air Defence set up, scientists from the CSIRO Radio Physics Laboratory, and Geoff Michael (Air Commodore, Retired), president of the RAAF Association. The CAS's address brought home to us the need to maintain high technology in the modern RAAF, to achieve much more, with much less.

A painting of No 316 Radar station, a typical WW II light weight portable station on Borneo, by Jack Messer who served there, was presented to the CAS during the dinner.

On the following day, a visit by bus to RAAF Williams (Laverton and Point Cook combined) saw a parade at the Radio School for presentation of a mounted valve type VT90 (Micropup) which was used in both ground and airborne radars in the early 1940's. The parade ended

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Element	4	3	2	2	1	1	3	3	1
Gain (dBi)	9.1	8	4/6/6	6/6/6	2.2	2.2	8	8	2.2
F/B Ratio	25/20/20	21/15/16	20/14/12	13/10/10	0	0	25/20/20	25/20/20	0
V.S.W.R.	SEE VSWR CHARTS					SEE VSWR CHARTS			
Max. Power	2KWpep	2KWpep	1KWpep	2KWpep	2KWpep	2KWpep	2KWpep	2KWpep	2KWpep
Impedance	50ohm	50ohm	50ohm	50ohm	50ohm	50ohm	~50ohm	~50ohm	~50ohm
Element L.	7.5m	7.3m	5m	7.3m	7.2m	8.5m	10.47m	10.47m	10.47m
Boom L.	6m	4.28m	2m	2m	—	—	6.28m	4.28m	—
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After lunch, we visited the RAAF Museum, but found that there was almost nothing there pertaining to the fact that the RAAF had over 140 stations around Australia and the Pacific Islands, manned by 4,000 trained personnel. This is now difficult to rectify, as there is little of the equipment left. Radar was one of the branches of the Services which was kept secret during and after World War II, to such an extent that photographic records and much other information has been lost in fires or shredded.

A special envelope has been issued by Australia Post to commemorate 50 years of Radar. The stamp depicts an Australian made set as used on Borneo and the Pacific Islands, and the envelope shows radar operators at work with a brief description on the back. Stamp collectors should not miss this one.

However, Ed Simmonds and Norm Smith (VK2AYU), two enthusiastic collectors, have produced three books in limited editions, which were selling well at Bendigo. The first is a selection of "Radar Yarns" — mostly unofficial stories kept under wraps (understandably) until now. The second is a pictorial record from private submissions of snaps on overseas stations, and some of the Radar school at Richmond. The third is similar, but of stations on the mainland of Australia,

many of these being operated by the WAAAF to release RAAF male operators for duty overseas.

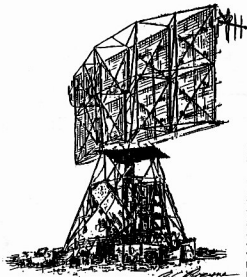
These books may be obtained from E W Simmonds, 2 Hind Avenue, Forster NSW 2428.

The Bendigo re-union has been wonderful. It enabled us to remember and renew friendships which had lapsed for nearly 50 years. A video tape is being prepared and will be available soon. En-

quiries should be made through the Air Defence Branch of the RAAF Association in NSW. A similar re-union of RAF Radar personnel was held in Coventry last year, 50 years after their part in the Battle of Britain.

The Sydney and Bendigo committees which worked so hard for three years, deserve our thanks for such a smooth operation. Good staff work still wins battles!!

ar



BURNT OUT RADAR — SAIDOR NEW GUINEA 1945

This drawing is an excellent portrayal of a Mk 1 LWIAW tower. It shows the cramped working area within the steel frame. The result, a small amount of air and poor ventilation giving the operators a poor working environment, being extremely hot and humid.

Murphy's Corner

VHF/UHF — An Expanding World

The above column for June contains an error for which I accept responsibility. In my haste to get the information to Eric Jamieson I have presented him with a garbled account of some of the activity on 1296 MHz. The first VK3 to VK1 contact was achieved by Arie, VK3AMZ and VK1DO/IACA/P on the evening of 13/3/92.

Returning to the text in Eric's column, the beginning of the last paragraph prior to the heading "Six Metres Standings List" should be amended as follows:

"On 13/3 Ron, VK3AFW, worked VK2BFP/P and VK2WG/P on 144. Later that evening VK3AMZ worked VK1DO/IACA/P on 1296 tropo for the first VK3 to VK1 contact on that band. John, VK3ZJC, copied VK2BE on 1296 during aircraft enhancement tests.

On 21/3 VK3AFW returned to Mount Buller and worked VK1BG on 1296 (rest of text as published).

For the record, the approximate distances from Mt Buller are as follows:

To Canberra	320 km
To Devonport	450 km
To Melbourne	150 km
To Adelaide	750 km
To Sydney	560 km

I apologise to your readers and especially to Arie, and Eric, VK5LP, for the errors.

Ron Cook VK3AFW
CSIRO Division of Applied Physics
Bayview Avenue
Clayton VIC 3168

Measurements on Balanced Lines

Please note that in the Meter Calibration Chart on page 12 of the July 1992 issue, the currents shown are in milliamps (mA) whereas they should have been in micro amps (µA).

Lloyd Butler VK5BR
18 Ottawa Avenue Panorama 5041.

Computarock Receiver

Whilst building a second Computarock Receiver (AR June 1992), I discovered two mistakes in my circuit. Could you please publish the following errata:

— The BFO USB/LSB switch is incorrectly labelled, and should be reversed from that shown.

— Details of the converter input filter coils were transposed, and should read as follows:

7 to 12 MHz; 2.6 µH: 21 turns #22 B&S on Amidon red T50-2 core.

12 to 28 MHz; 0.9 µH: 11 turns #22 B&S on Amidon yellow T50-6 core.

Drew Diamond VK3XU
"Nar Meian"
Lot 2 Gatters Road, Wonga Park 3115.

ar

Unique 20/15 Metre Dipole

Adrian Fell VK2DZF
PO Box 344
Baulkham Hills NSW 2153

The Dipole antenna described in this article is a simple yet unique duo-band design which utilises a common feedline. The design is also compact relative to a full size 20 m dipole and incorporates controlled feeder radiation (CFR) technique as described in AR Nov 1990.

very strange things happen with Baluns in the past.

The two turns of coax through the small toroid is not as specified by the original article as I used available stock. Readers should refer to the original article for details if the winding technique.

The idea is to let the coaxial cable radiate but only down to point 0.275 wavelength from the feedpoint. Below this point no RF should be present. As this section is vertical and we have 2-band design I elected to optimise this portion for the 15 metre band as the 20 metre dipole has a portion of its ends already in the vertical position.

Radiation of RF from the shield of coaxial cable is not only wasted power but it also brings RF back into the shack or house causing TVI.

The recommended choice of cable is RG58C/U. Not only does this keep costs down but because of the weight saving keeps the antenna in shape and it is easier to keep in the air. If you have a long run to the shack it would be advisable to then change over to a heavier gauge such as RG213 at ground level or the support.

COSTS ARE KEPT TO a minimum which is important these days. Good performances can be expected on both local and DX contacts assuming the antenna is located well in the clear and reasonably high above the ground.

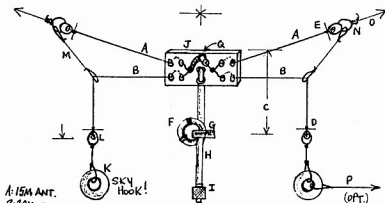
The general arrangement is shown in Figure 1 and although the dimensions are given for the 20 and 15 metre bands other frequencies can be used if the lengths of the dipoles and CFR are changed accordingly.

It's amazing how well the dipole will work even for DX contacts and looking at some QSL cards of mine confirm this fact. There are a lot of dipoles being used with good results. This design may prove suitable for a primary or secondary station antenna or it may be the answer for a compact light weight field day antenna.

The idea of a bent 20 m section and reversed Sky Hooks, as I call them, came about as my gum tree supports were just too close together for a full size span 20 m dipole. Ever tried moving gum trees?

I guess some vertical polarisation is expected of the 20 m section as a result of the bending but this is of no concern with my requirements.

The CFR technique was chosen as an alternative to using the normal 1 to 1 Balun at the feedpoint as I have had some



- A. 11'0" (3.35m) Multi-strand insulated earth wire (typ)
B. 16'3" (4.95m) " " " " " " " "
C. 12'9" (3.88m) Distance between Q & toroid G. "
D. 6" (15cm) Per side, solid copper tuning aid.
E. 4" (10cm) " " " " " " " "
F. 2 turns of coax, 4" (10cm) dia. G. small toroid
H. RG58 c/u coaxial cable I. Plug PL259
J. 4" x 2" x 1/2" thick perspex (typ) K. 1.5lb weight (opt)
L. Egg insulator (typ) 4-req. M. Polypropylene cord 3' (1.9m) +
N. Special knot for cord, used on Poly cord, see ARRL Handbook
O. Cord to pole, tree etc. P. Anti sway line
Q. Use 5 min Araldite to seal end of coax.
D. & E. bend or cut during tuning. 1 loop and solder to end.
J. Solder all connections.
Note: meter measurements are approx.
Note: measure from point "Q" to very end of wire when wire is being cut, allow at least 6" to go around insulator. Double check before cutting.

Figure 1. 20/15 metre Dipole VK2DZF

By having a PL259 arrangement at ground level it is then a simple matter to move your rig out into the backyard on sunny days. Add a few cold drinks, lemonade of course, thereby, during the JOTA days keeping everybody out of the shack. Well — I thought it was a good idea!

Getting the dipole as high as possible certainly helps, not only from a performance point of view but also keeps it away from surrounding and offending objects. This also assures the length won't have to be altered too much if the antenna is well clear of everything. The ends are particularly sensitive to nearby objects such as trees, guttering and roofing etc. Although the just mentioned reasons will often be the best approach some extra gain might be achieved on transmission by mounting the dipole at some predetermined wavelength multiple from the ground. The ground reflection could then add up to the transmitted signal giving some extra "oomph". Interested readers should refer to the RSGB or ARRL handbooks for information but remember the height will be a compromise with a 2 band design. The only amount of tuning required assuming a good location will be to bring the lowest VSWR point to your favourite portion of the band.

This is fairly straightforward, and my favourite way is to check the VSWR at the extreme ends of each band. It is then a simple matter to see which way, longer or shorter, to adjust the ends. The method I used is seen in Figure 1 but this is optional and you may have a better idea. There will be a slight interaction between the 2 bands during pruning so after one band dipole is adjusted check both bands before doing the other.

Sometimes if things are not going well and a high VSWR, over 1.5 to 1, is experienced try reversing the whole array or adjust the height. There should only have to be a few inches of adjustment to get it spot on.

But don't worry too much if 1.5 to 1 is the lowest VSWR you get as the VSWR does not always tell the whole story. My results are 1.3 to 1 at resonance on 15 metres and 1 to 1 at resonance on 20 metres and the height is about 45 feet off the ground.

Although it's great to have a tower and a Yagi or a Quad, I did have, it still gives me great satisfaction working the world on a simple wire antenna like a dipole and it's also a lot of fun.

ar

A Fault in the PLL of an IC22S

Keith Gooley VK5BGZ
Lot 15 Tensate Court
One Tree Hill SA 5114

Do you own an IC22S which is either not working at all or works only intermittently? There must be quite a few of you as there were over 3000 IC22Ss sold in Australia. If you have such a rig, I hope this article will help you to get it working again.

ONE OF THE THINGS I like about the IC22S for mobile operation is that you don't have to look at the rig to change channels, just count the clicks of the switch as you rotate it, and it doesn't have a microprocessor which is prone to lose its memory. These otherwise excellent mobile two metre FM rigs have a reputation for intermittent faults, primarily in the Phase Locked Loop (PLL) board. So it was with my IC22S.

Before going on to describe the faults and the method of repair, it may be helpful to give a description of the basic operation of the IC22S PLL.

Figure 1 is a block diagram of the PLL itself. The voltage controlled oscillator (VCO) is the first local oscillator for the receiver. Its output goes to a mixer as well as the transmitter and receiver. The VCO frequency is translated down from the MHz to kHz region as the frequency dividers are not fast enough to divide down the 135 MHz signal directly. The local oscillator for this mixer is a single overtone crystal on 44,567 MHz and the third harmonic on 133.7 MHz is selected in the collector circuit of the oscillator.

The resulting output signal from the mixer on 50 kHz to 3.6 MHz is divided

by 2 in one flip-flop of a 4013 IC. These CMOS devices have a maximum input frequency for a supply voltage of 9 volts of about 10 MHz, and so if the VCO frequency goes above about 144 MHz for any reason, this divider will cease to work and this may prevent the VCO from being pulled back down again.

The 4013 output passes to IC1 the programmable divider which simply divides the input frequency by the number applied in binary format to its programming pins. This can be any number from 2 to 255. At the lower limit of the frequency range, 144.4 MHz this IC divides by 2 and at the top end, 147.975 MHz it divides by 143. These are the transmit frequencies for simplex or +600 kHz and for these two modes, 24 is added to the divisor during receive. The 24 is derived from 600 divided by 25, 25 being the frequency increment of the programmable divider.

For PLL's in general this increment is usually equal to the reference frequency at which the phase comparison is done, but in the IC22S the heterodyned down VCO frequency is divided by 2 before entering the programmable divider and

hence the reference frequency is required to be 12.5 kHz to give channel spacings of 25 kHz. When the loop is locked the output of this IC is always 12.5 kHz which is the reference frequency for the PLL. IC3 is a crystal oscillator divider which produces a 25 kHz signal by dividing the 6.4 MHz crystal signal by 256. This 25 kHz is further divided by 2 in the other half of the 4013 flip-flop. This latter stage is not shown on the circuit diagram which came with the set.

The two 12.5 kHz signals, divided down VCO and reference, are phase compared in IC2 which also contains an op-amp forming part of the loop filter. This is a low pass filter to remove any 12.5 kHz components which may modulate the VCO. The DC voltage at the output of this filter is proportional to the phase difference between the two input signals and goes high if the VCO frequency is too low and vice-versa. The amount by which the

VCO moves in frequency for each volt change on its control input, known as the VCO constant is about 1.6 MHz per volt. So there is only about 2 volts change in the voltage on pin 1 of IC2 for the full range of the PLL.

The Faults

Now back to the problems with my IC225. The unit would not lock in at switch-on, or it would lose lock at various times, most embarrassing when in the middle of a QSO. The manual is quite comprehensive in describing the operation of the PLL and I found that with the PLL not locked, the supply voltage to the 4013 dual divide by two flip-flop fell to less than five volts, instead of nine. This was traced to a dry solder joint on the supply side of R25, a 15 Ohm resistor.

Once this was cured the two divide by two operated properly but the programmable divider IC1 (TC5080P) was not

functioning. This is best checked with a CRO but a logic probe or even a simple RF probe and multimeter will tell you if there is a full nine volt swing out of the divider (pin 10). The frequency will be 12.5 kHz when the PLL is locked. I found no signal to speak of at the output and the input waveform did not go down to zero volts. The output of the 4013 which drives the 5080 is connected to it by a wire link on top of the board, making it easy to disconnect and measure the current which flowed to battery negative through the current shunt of the multimeter from the input pin of the 5080. It was several mA, much more than the 4013 could drive and so I assumed that the 5080 was faulty.

Let's have a think. The programmable divider is simply a device which accepts an 8 bit binary word and divides the input frequency by that number; feed it the binary equivalent of 63 and it divides by 63; feed it 187 and the input frequency is divided by 187; quite a common function in the digital world. Looking through the 4000 series CMOS data book, I found a 4526 which is a 4 bit binary programmable divider, capable of being cascaded to produce dividers of any length. Referring to the application circuit in the data sheet, I soon produced the equivalent circuit function to the original TC5080P. See fig 2.

It was then only a matter of connecting the two 4526's up on a piece of veroboard, see fig 2, and attaching the assembly to the outside of the shield around that part of the PLL. See photograph. The faulty 5080 was removed and the 8 bit divider control connected to the two new CMOS IC's with ribbon cable, the other end of the ribbon cable being soldered into the holes previously occupied by pins 1 to 8 of the 5080. The input signal was run from the 4013 and the output back to the hole where pin 10 of the 5080 used to be.

When I switched on, the rig worked "as good as new" with the replacement ICs performing satisfactorily. Before closing the set up, I made sure the PLL would lock over the full frequency range, adjusting the VCO coil slug such that the VCO control voltage was about 5 volts in the centre of the frequency range. This voltage is available on pin 1 of IC2, a TC5081P phase detector and loop filter. With the loop locked, adjustment of the VCO coil slug causes the control voltage to rise or fall cancelling the effect on the VCO frequency of the change in inductance of the VCO coil. You need to be

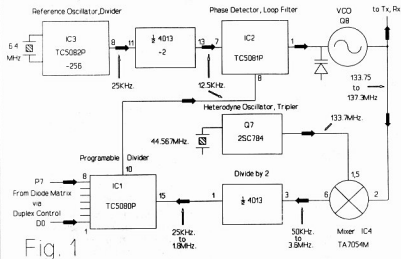
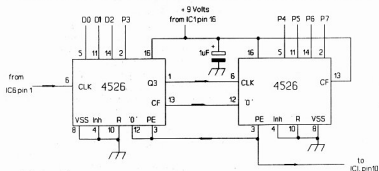


Fig. 1



Note: D0 to P7 come from IC1, pins 1 to 8 respectively.

Fig. 2

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FT-911 23cm HANDHELD

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2 YEAR WARRANTY

The incredibly compact FT-911 transceiver provides superb performance on the 23cm amateur band and is designed for quick and easy operation. A multi-function backlit keypad allows fast frequency entry, plus programming of the 49 tuneable memories, setting of the programmable 'power saver' system and a host of other convenient functions.

The microprocessor control system also features 2 VFOs, rotary dial tuning in 4 selectable tuning steps, a backlit 7 digit LCD screen with bargraph P.O/S-meter, and a range of scanning features including busy channel, band, or selective memory scanning and priority channel monitoring. VOX (Voice Operated TX) circuitry is also provided, allowing handsfree operation with the optional YH-2 headset. Comes complete with a long-life 7.2V 1000mAh NiCad battery pack, carry case, belt clip, 'rubber duckie' antenna and approved AC charger.

Specifications

Frequency Coverage:

Channel Steps:

Power Output:

Current Consumption -

Stand-by (with 1 sec. save):

Receive:

Sensitivity (12dB SINAD):

Dimensions:

1240-1300MHz

10, 12.5, 20 & 25kHz

1W @ 7.2V - 12V

11mA

150mA

Better than 0.2uV

55 x 155
x 32mm

Cat D-3380

\$699

FT-912R 23cm MOBILE TRANSCIVER



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Here's a compact 23cm FM mobile transceiver that really packs a punch! It's ideal for both mobile and base stations and has a wide frequency coverage (1240-1300MHz), plus 10 watts RF output. A rugged die-cast chassis together with extensive use of surface-mount components gives excellent RF isolation and long-term reliability. What's more, the easy to use control panel has a backlit LCD screen with auto brightness control and P.O/S-meter. As well, it has 4 selectable tuning steps, a total of 21 memories, inbuilt CTCSS tone squelch encode, one-touch repeater reverse and a variety of scanning functions. Comes complete with a mobile mounting bracket, MH-14A8 hand microphone and DC power lead. Cat D-3390

MEGA BONUS - SAVING OF \$70!

With every FT-912R you can purchase the Diamond F-1230A 23cm 13.5dBi gain vertical base antenna for just \$169 (Cat D-4870, usually \$239)

\$899

FT-650 6m/10m/12m TRANSCIVER



2 YEAR WARRANTY

The FT-650 is a high power all-mode mobile transceiver packed with specialist features for the serious 6m operator. There's continuous coverage reception from 24.5 to 56MHz (so you can follow the rising M.U.F. and work the DX earlier) and 3 direct digital synthesizers (DDS) for clean transmit and receive operation. It has 6 front-end Band Pass Filters and a 2 stage low noise preamp for exceptional sensitivity (SSB typically 0.125uV). User selectable tuning steps, manual and automatic IF Notch filters, IF Shift and IF bandwidth controls give optimum performance under difficult conditions. In addition, DDS gives SSB bandwidths of 1.8, 2.0, 2.2 and 2.4kHz as standard. With Yaesu MH-1 hand microphone. Cat D-3250

MEGA BONUS - VALUED AT \$199! \$2295

With every FT-650 you get a HF/6m SWR/PWR meter with accurate P.E.P. metering of no extra cost. Cat D-3600



FT-411E 2m HANDHELD

Superb performance on the 2m band. Top of the line features, reliability and value for money from the name you can trust... Yaesu. Only the compact FT-411E offers these features as standard...

- 144 to 148MHz transceive operation, with enhanced receiver performance
 - Ultra long life 1000mAh 7.2V NiCad battery pack (supplied as standard!)
 - 2.5 watts RF output as standard, 5 watts with 12V DC (or optional FNB-11 NiCad)
 - Better than 0.16µV (12dB SINAD) sensitivity
 - Stand-by current consumption (1 sec SAVE) only 7mA
 - Programmable power saver for extended operating periods
 - Keypad or dial frequency entry, with selectable tuning rates
 - 49 tuneable memories which store repeater offsets
 - Band, memory, priority or limited-band scanning
 - Just 55 x 155 x 32mm
 - Carry case, belt clip, carry strap and approved AC charger
 - Now with enhanced receiver sensitivity and improved strong signal handling!
- Cat D-3350

**MEGA
BONUS**

With every FT-411E you get a bonus FNB-14 1000mAh NiCad battery (Cat D-3351)

VALUED AT \$99.95

* Offer valid until the 30th of August or while stocks last

\$479

**2 YEAR
WARRANTY**

FT-470 2m/70cm HANDHELD

Dual-band performance at its best! The compact FT-470 is an easy to use handheld transceiver that gives you greater flexibility with a sensible microprocessor control system for both 2m and 70cm operation.

- 144-148MHz and 430-450MHz transceive operation
 - Single band or dual-band receive, or full duplex cross-band operation
 - Ultra long-life 1000mAh 7.2V NiCad battery (supplied as standard!)
 - 2.3 watts RF output (both bands) as standard, 5 watts with 12V DC
 - Back-lit dual 5 1/2 digit frequency LCD screen
 - Better than 0.16µV (12dB SINAD) sensitivity on both bands
 - C.T.C.S.S tone squelch encode/decode inbuilt as standard!
 - Stand-by current consumption (with 1 sec save) only 8mA per band
 - Keypad or dial frequency entry, with selectable tuning/scanning rates
 - 21 tuneable memories and 2 VFO's per band
 - Band, memory, priority or limited band scanning
 - Complete with carry case, belt clip, carry strap and approved AC charger
 - Only 55 x 180 x 32mm
- Cat D-3360



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BONUS**

With every FT-470 you get a bonus FNB-14 1000mAh NiCad battery (Cat D-3351)

VALUED AT \$99.95

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\$749

**2 YEAR
WARRANTY**

FT-747GX COMPACT H.F. TRANSCEIVER



The FT-747GX is a compact SSB/CW/AM and optional FM transceiver providing 100 watts PEP output on all 1.8-30MHz amateur bands, and general coverage reception from 100kHz to 30MHz. Convenient features include a front panel mounted speaker and an easy to read backlit digital display, dual operator selectable tuning steps for each mode, dual VFO's for split frequency operation and 20 memory channels (eighteen of which can store split Tx/Rx frequencies). Wideband 6kHz AM and narrow 500Hz CW IF filters are also a standard feature. Complete with Yaesu MH-1 hand microphone.

Cat D-2930

2 YEAR WARRANTY

\$1299

YAESU

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BONUS**

Your choice of 2 Mobile One HF whips from our range of 80m, 40m or 20m whips **WORTH OVER \$85.**

* Offer valid until the 30th of August or while stocks last.

DICK SMITH ELECTRONICS

**SAVE
\$30**

A PRICE BREAKTHROUGH

Don't miss this best ever price on the popular Diamond X-200A dualband 2m/70cm base station antenna. Hurry in and save \$30 on this high performance Japanese vertical antenna (while stocks last). The X-200A uses robust FRP (fibreglass reinforced polyester) tubing construction and a ground plane to provide excellent all-weather operation and a clean low-angle radiation pattern. This sturdy antenna has stainless steel hardware throughout and solid mounting hardware for a stable connection to your mast.

Specifications

Frequency - 144-148MHz, 430-450MHz
Gain - 2m: 6dB, 70cm: 8dB
Max Power - 200W
Length - 2.5m
Type - 2 x 5/8 wave (2m)
4 x 5/8 wave (70cm)

Cat D-4860

\$169



ST-7500 2m/70cm MOBILE ANTENNA

A high performance dualband antenna at a down to earth price! The ST-7500 is just 1 metre long and uses a ground independent design to provide high gain (3dB on 2m, 5.5dB on 70cm) with a maximum power rating of 150W. Quality construction plus a tiltable whip structure makes it especially ideal for the discerning mobile operator. Requires SO-239 antenna base (D-4035 recommended) Cat D-4810

BRANER \$79⁹⁵

2m/70cm HIGH GAIN HANDHELD ANTENNA

The Diamond RH770 is a high gain telescopic dualband antenna for use on handheld transceivers when maximum range is required. It provides approximately 3dB gain on 2m and 5.5dB gain on 70cm. It weighs just 85 grams and collapses from 93cm to 23cm for easy storage. Comes fitted with a standard BNC connector to attach to your transceiver. Cat D-4336

\$79⁹⁵



HUSTLER

HUSTLER HF TRAP VERTICAL ANTENNA

The tradition continues! The 5BTV is yet another masterpiece from the people who have been making antennas for over 33 years. This rugged 5 band HF trap vertical uses Hustler's exclusive trap design (25mm solid fibreglass formers, high-tolerance trap covers and low loss windings), for accurate trap resonance with 1kW PEP power handling. Wideband coverage is provided on the 10, 15, 20 and 40m bands (SWR typically 1.15:1 at resonance, less than 2:1 SWR at band edges), with 80kHz bandwidth typical on 80m at less than 2:1 SWR. An optional 30m resonator kit can also be installed without affecting operation of the antenna.

High strength aluminium tubing and a 4mm (wall thickness) extra heavy-duty base section provides optimum mechanical stability. What's more, stainless steel clamps and hardware guarantee a longer life. At just 7.65m, the 5BTV can be ground mounted (with or without radials, although radials are recommended), or it can be mounted in an elevated position with a radial system. Unlike other antenna designs the 5BTV can be fed with any length of 50 ohm coax cable. Cat D-4920

\$299

30m Resonator Kit

Adds 30m coverage and includes all hardware. Cat D-4921

\$79⁹⁵

VRK-1 Radial Kit

Provides a ground-plane for above ground mounting Cat D-4922

\$59⁹⁵

HUSTLER RX-2 2m 5/8 WAVE MOBILE

Here's value! A quality 2m 5/8 wave magnetic mount antenna for mobile or temporary base station use. Comes complete with 4.5m of coax cable with a PL 259 attached. It has 3dB gain with a power rating of 100W maximum and a flexible stainless steel radiator to minimise wind loading.

\$49⁹⁵

HUSTLER Cat D-4805

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careful not to adjust the VCO too low in frequency as it can be moved to the opposite side of the fixed heterodyne frequency (133.7 MHz). Then the loop will never lock as the feedback is positive instead of negative and the VCO will be driven to the lowest frequency and stay there. The correct VCO frequency range is 133.75 to 137.35 MHz.

If your IC22S has a faulty 5080 and you decide to have a go at replacing it with 4526s as I have done, you can test the assembled divider before installing it in the set by checking that it divides by say 104. This is the divisor for a frequency of 147 MHz with the VCO on 136.3 MHz. Connect the 8 data input lines P7 — D0 to the binary equivalent of 104 ie 01101000. Feed an input frequency of 1.30 MHz to pin 6 of the first 4526 and the signal on pin 3 of the second 4526 should be 12.5 kHz. Taking D0 from a 0 to a 1 should reduce the output frequency to 1.3 divided by 105 ie 12.381 kHz. If all is well, the new divider may be installed in the rig with a fair degree of confidence.

I hope this article has helped some of the many IC22S owners to better understand the synthesiser and to get around the high cost of original spare parts.

ar

Try This

**Adrian Fell VK2DZF Box 344
Baulkham Hills 2153**

RG58U coaxial cable braid, when stripped of the inner cable and insulation, makes a good flexible wire for feed point connections on antennae.

The braid should be run through pinched fingers to flatten it out first.

ar

**Tell the
advertisers
you saw it in
the WIA
Amateur
Radio
magazine!**

Technical Abstracts

**Gill Sones VK3AUI
30 Moore Street
Box Hill South, 3128**

Transceiver PSU from Computer PSU

UDO THEINERT DL2YEO in the April 1992 issue of CQ DL describes the conversion of a computer power supply into a 12-volt high current power supply for a HF transceiver. A translation of the article appears in the Rad Com column Eurotek by Erwin David G4LQ1 in the July 1992 issue.

PCs have a switching power supply which has output capabilities from 60 to 200+ watts. I have seen 350 watt versions and 200 watt units are common. The price is very reasonable with new units retailing in the range of \$100 to \$200. Even less for flea market and ex-service stock.

Udo DL2YEO came by one, which after investigation and some work, he converted into a power supply for a HF transceiver. He found that the supply used a common regulator IC type TL494. All the outputs came from a common tapped secondary winding via rectifiers and filters. This meant that rewinding the transformer was not needed as the wire could accommodate the highest current supply.

Conversion consisted of rewiring the output from multiple outputs to a single 12 volt output using the high current rectifiers previously used for the 5 volt output. Some rewiring of the filtering was also needed. The voltage regulator reference and protection circuitry needed some adjustment to cope with this change. The circuit had circuits to protect from over-current and to provide short circuit protection. There were simply reinstated with modifications for a single output voltage.

Additionally a load bleeder resistor was installed to provide a minimum load and some additional storage capacitors were installed along with additional filter sections. The mains input had an additional block mains filter installed. The DC output needed an additional Pi section added to eliminate noise.

These supplies follow a common general block diagram as shown in Fig 1. The first step in conversion is to obtain a circuit. If the is not available it should not be too hard to trace. Then set it up with loads on all outputs and measure voltages at all points. This will aid in restructuring the voltage regulator reference and protection circuits to single output.

Safety

Remember when working on a switching power supply that part of it is at AC Mains potential. An isolation transformer is handy but you should always switch off and unplug before touching anything. This is particularly important when directly plugged into the AC Mains. PC power supplies use transformer isolation between input and output but there is a significant amount of circuitry at mains potential. The regulator and output DC circuits are quite safe as they are isolated by transformers. However, remember that you should treat anything inside the box with respect. Switch off and unplug before touching things.

For additional mains filtering use one of the proprietary block main filters. These are made for the job. Do not make your own.

The Rad Com article carries a translation of the original article and it

is well worth the trouble of obtaining it if you set about converting one of these supplies.

A possible source of cheap supplies is the computer service industry as many computer faults are fixed by substitution. In common with many other areas sub assemblies such as power supplies are often regarded as uneconomic to repair. They may be a rich source for the frugal amateur.

Replacement Valves

Many transceivers use valves for the finals and the driver stage. These were once easy to obtain and cheap. Valves were fairly rugged and tolerant of abuse. Replacement was trouble free.

Lately reports in overseas magazines highlight problems being experienced when valves from other than the original suppliers are used for replacements. Valves are now being sourced from a dwindling number of sources. These sources are often not in Australia, the UK, the USA, or Japan and the specifications and performance are variable.

The surviving valve manufacturers are often in such places as China, Russia, Eastern Europe, and South America. While many of them have good products there are a few of lesser quality.

Both Technical Topics in Rad Com July 1992 and Bill Orr W6SAI in CQ May 1992 have items concerning the problems

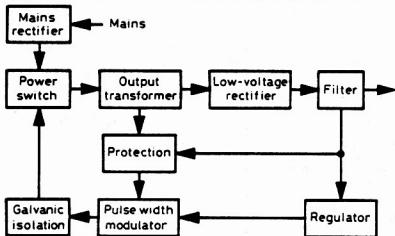


Fig 1 Block Diagram of Power Supply.

being experienced. Solutions to some of the problems and ways to avoid problems are discussed.

Many of the original manufacturers no longer make the valves we are familiar with. However, many alternative sources of supply have come onto the market. Unfortunately, only the type number of these alternative valves bear any resemblance to the originals when they are used in RF service.

Sweep tubes are the worse offenders, as their use in a transceiver final is very different to their intended use as a TV

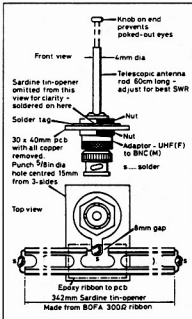


Fig 2 145MHz Ground Plane using STO for use with Hand Held Transceiver.

deflection driver. However, even transmitting valves are not immune as they are often not made to the originally tight standards.

Valves made by old established companies are OK, if they can be obtained. However, valves from unknown sources should be approached with caution. A reputable local retailer is a good start. One familiar with amateur usage and problems is desirable. The premium you pay is money well spent.

Both the physical and electrical characteristics should be checked.

Repeaters — additions, deletions, alterations. Have you advised the WIA of changes needed to the repeater list?

VHF/UHF — An Expanding World

Eric Jamieson VK5LP PO Box 169 Meningie 5264

All times are UTC

50 — 54 MHz DX STANDINGS

DXCC Countries based on information received up to 25 June 1992. Crossband totals are those not duplicated by two-way contacts. A call sign cannot be displaced from its existing position except by another with a higher confirmed number.

Column 1: 50/52 MHz two-way confirmed contacts

Column 2: 50/52 MHz two-way claimed as worked but not confirmed Column 3: Crossband 50/52 MHz to 28 MHz confirmed

Column 4: Crossband 50/52 MHz to 28 MHz worked

Column 5: Countries heard on 50/52 MHz

Call Sign	1	2	3	4	5
VK4ZJB	90	94			04
VK4BRG	81	87			
VK3OT	78	81			
VK2QF	78	83			
VK4ALM	65	67			
VK4ZAL	65	68			
VK2BA	62	63		04	
VK8ZLX	45	60		01	
VK3AMK	45	47			
VK6HK	45	45		03	
VK8GB	42	42			13
VK5RO	39	48		03	
VK6RO	39	39	01		12
VK3AWY	34	36			
VK3AU	34	35			
VK5LP	33	36			09
VK3NM	31	34			
VK5BC	29	63			
VK2DDG	25	26		02	13
VK4KHZ	23	34			
VK3XQ	23	25			02
VK6PA	23	43			
VK4TL	22	23			
VK2KAY	21	23			
VK2BNN	20	21			
VK9LG	20	20			
VK4BJE	19	25			
VK4KAA	19	20			
VK7JG	18	20			02
VK3TU	17	19			
VK2ZRU	16	19			04
VK4ZSH	16	16			
VK2ZSC	16	30			
VK9LE	14	14			
VK6OX	10	10		01	
VK5KL	06	11		01	16

Overseas

JA2TTO	48	48			06
YJ8RG	25	25			

The next list is planned for the February 1993 issue. Copy, additions or alterations to me by 20 December 1992 please. I thank those contributors who continue to support their claims with photocopies of QSLs or have them certified by other amateurs. It helps!

Six Metres In VK

The best that can be said is that the band is very quiet. A number of amateurs have expressed the view that Cycle 22 has now finished, however, I would not be that adamant and believe that we can expect some F2 contacts at least during the next two equinoctial periods. I may be wrong but let us wait and see!

Ron VK4BRG says that from his Sarina location the last few months were somewhat disappointing, with little of significance from the Caribbean and very limited contacts to the US central and east coast areas. He expected trouble working V85 but this proved not to be so. His most significant discovery was the long path propagation to South America but believed that would have been better had he been further north.

Don VK6HK also reports a quiet time in Western Australia, however, as an aside says that over the years a total of 60 countries have been reported collectively by operators from Perth and these include the following prefixes: VK, VK9 Papua, ZL, VR2 Fiji, JA, YJ8, HL9, W6, H44, V55, VK9 Willis, FK8, VKO Macquarie, VK9 Lord Howe, KH6, LA3, OH1, YC0, KG6, T30, DU3, XF4L, 9M2, V56, GJ4, G4, PA0, GW3, SM7, GM4, GD3, G18, KH5J, T32B, OA0, LX1, KH4, V73, ZS6, V51, 7Q7, A22, JT1, OZ4, KH7, DK0, KC6, KC2, BY, JD1, VK9 Norfolk, YS, C21, 457, OK, ZC4, 1, ZS9, EI and P29.

The Tarawa Operation

In a letter to Steve VK3OT, Jack T30JH said after his stint on Tarawa that he was disappointed at the apparent lack of interest from many VK and ZL stations who had not requested a QSL, particularly as he never went there for a social chat on six metres! He worked 57 VK4s and received 22 QSLs, 38 VK2s and 10 QSLs, 7 VK3s and 2 QSLs, 5 VK8s, 3 VK1s and one VK5 none of whom QSLed, one VK7 and one QSL, one VK9 and no QSL, 23 ZLs and 5 QSLs. He worked about 400 JAs, more than half of whom QSLed. Other areas worked were 3D2, P29, V73, KH7, KH6 and heard V63, C21, KH3 and WA6.

The possibility exists that later this year Jack may activate T31 and T33, no doubt in the

hope that there will be a greater interest shown in his efforts by amateurs at least sending a QSL.

By the way, if he operates again as T30JH he wants to be spared working excessive duplicates and an alphabetical list of those already worked hangs in the shack as a reminder! Last month I mentioned 5H3RA and ZS6CW voicing the same sentiments and to that list should also be added GJ4ICD, G4UPS, G3WOS, G3RFS, EKOJA, UZ0CWW, OH2TI, DL8HCZ and C21BR. Unfortunately, the list will continue to grow unless some amateurs change their operating habits.

New Records

John Martin VK3ZJC, Chairman of FTAC, advises some new distance records:

6 metres: VK2 and national short path record, VK2FLR to CU/N6AMG at 19424.1 km on 27/11/91; VK4 state record (two of them on the same day — 15/02/92), VK4KK to G8VR at 16416 km and VK4KK to G4CCZ at 16515 km; VK7 state record, VK7IK to PA0LSB at 17053 km on 08/02/92. 23 cm: VK1 division record VK1VP to VK3ZJC at 451.7 km on 28/04/92.

The GJ4ICD Report

Propagation may be poor in VK but with the northern hemisphere enjoying its summer E period, all that is needed there is to shift from the F2 gear to the Es gear and simply go on working stations on a daily basis! In support of that comment, the following is a sample of stations worked or heard for May 1992.

4/5: 4X1IF to PA and SM. 5/5: G17, PA3, G3, SM3, IK8, 9H, FR5, OY9. 6/5: 9H, YU, UL7, V51b, IT9, Z23, 7Q7, 9J2, A22G, 8R1, 7/5: DL, OK, SM6, TU2, FY7b, CT1, ZB2b, CT0, CX4, LU in for hours! 9/5: ON, PA4, VK5, SM, OH, LA, DL, V51b, over six hours of 59 S! 10/5: large aurora, GM, GI, GD, EI, PA0, ON, SM1 using 150 milliwatts to cover the 1637 km, OZ, ZS6, 11/5: OK, I, YO, 12/5: 10, 9H, OK1, F, ES6, YO7, SP4, 4N2, OK, 7Q7, ZS6, DL8, ZB2b, 13/5: ZS6, V51b, 9J2, ZS4, VE, CX4, 14/5: SM, LA, 4N2, LY, SP, DL, CN8, E, ZB, YU, OK, ISO, CX4, LU, ES6 all 59, 7Q7.

16/5: CN8, FR/G/DJ30S Glorious Isle, many LUs, 8R1, CX4, ZB2b, 17/5: tropo to DL, OZ, PA, 9J2, 7Q7, 18/5: LA, SM, OH, FR/DJ30S, 7Q7, CT, 19/5: LA, YU, CX1b, LU9, 21/5: SM, UL7, V51b, 7Q7, EAI, LU2, CT, ZB2b, GM3, CN8, CT1, 23/5: OZ, SM, DL, YU7, GM3, LU, 24/5: LA, SM, OZ, LA, GB3, GM, 7Q7, IK8, 9H1, 4N2b, D68BR, 25/5: ES6, OH5, SM, DL, 26/5: SM, LA, 4N2b, TM5CHA Chausey Isle.

The good tropo on 17/5 produced some useful 23 cm contacts. Geoff worked many DLs plus two firsts for GJ, to OZ and later SM6HYG at 59/55 for a distance of nearly 1400 km. 23 cm beacons from LA were audible for ten hours and he also worked DBOOS, GB3MHL

and heard beacons from France and PA0. In all, ten beacons were copied. A part QSO took place (one way) between SM6HYG and G4FUF on 10 GHz. What a day!

From G4UPS

On might think there would be little difference in propagation between G4J4CD and G4UPS but there is, as this comparison shows: 5/5: SM, 9H, DL, II and several 12s, 4N3/b, YU3, F, CT1, Z3, SM3, 6/6: OH, SM, IT9, 7Q7, Z23, A22, V51/b, ZD8/b, EA3/b, 7/5: 4N3/b, 4N2, IK8, DL7, PA3, OK1, CT0, GU0, 8R1, CX4, LU, 9/5: ON & PA work VK4, OH, SM, many OZs, LA4, 10/5: SM, PA, GM4, FC1, GD7, DK, EI, ON, F, OK, OZ, YU, IK2, 11/5: ZS6 to SM, OH, OZ and DL, 12/5: 4N2, OE, DL, EA, YU, SM, V51/b, 13/5: ZS6, V51/b, CX4, PY5, ZB2/b, CT0, VE1 heard, 14/5: DJ, 4N2, OK, IC8, SP4 crossband, SM, LA, ISO, FC1, YT3, 192, 7Q7, CN8, 15/5: IK, YU, 4N2, DL, SV1/b.

16/5: CN8, LU4, CX1/b, 8R1, ZD8/b, ZB2/b, 18/5: YU, LA, SM, OH, OG, KP1, 7Q7, FR/DJ30S, IK, ES5, ZD8/b, 21/5: OK, DJ, YU, OE, I4, ZB2/b, ZB0, V51/b, 7Q7, EA3, CT0/b, ON. Station closed 22/5 to 28/5 inc. 29/5: CT0/b, EA3/b, ZB2/b, CN8, 9H1, F6, 7Q7, I6, OK, YU, SV, 5B4/b, 4N3/b, TA5, ZC4, 55 Italian stations all over band! 4Z7, ZB0, SZ2/b, 30/5: EA, ZB2/b, 9H5EE, IS0, SV1, F, PA, ON, OH, OG, SM, YT, 5B4, IT9, 4N3/b, 31/5: IK, 9H5, HB9QQ (using 100 mW!), YU, OE, 5B4, TA5, 7Q7, DK, ZC4, 4Z7.

From the above two reports it is fairly obvious that no matter where you live, particularly in the more central regions of Europe, including the UK, there will always be someone to work, either by Es, F2, TEP, tropo, aurora, backscatter etc. If you become tired of six metres, then you need only tune to 144, 432 and 1296 MHz where there are obviously many stations to work. What a place to live! However, because it is relatively easy to work stations around you on those bands, I wonder how much serious work has taken place in attempting to work from Europe across the Atlantic to North and South America and southwards to Africa, or any points between such places. Any comments?

1296 MHz Report

In June I reported on 1296 MHz activity and asked for more details. John VK3ZJC has responded and also advised that where I mentioned VK3ZJF this should read VK3ZJC. Sorry John.

On 1296 MHz, from the VK3ZJC log: 21/3: 2245 VK2BE worked for three minutes on CW; 22/3: 2230 worked VK2BE 529 both ways; VK3AMZ heard VK2BE. 24/3: 1115 VK1BIB 519 both ways. 28/3: 2237 VK1BIB SSB 5x3 sent, 5x1 received; 2254 VK1VP SSB 5x8, 5x6; 2257 VK1BIB again, 5x5, 5x4. 11/4: 2217 VK1VP 5x8, 5x5; VK2BE heard to 56 but no contact. 12/4: 2206 VK1VP 5x7, 5x4 — worked under signals from VK2BE; 2207 VK2BE 5x5, 5x5;

2225 VK1VP 5x7, 5x7. 2/5: 2250 VK1VP 5x5, 5x3. 3/5 2225 VK1VP 5x4, 5x4. All via aircraft enhancement.

The distance from John to Ed VK1VP is 451.7 kms and a new VK1 record. The distance from Arie VK3AMZ to Ian VK1BIB is 490 kms. The distance to VK2BE is around 700 kms.

John says the received signals have been higher than anticipated and are usually better than on 144 and 432 MHz. The window seems to open earlier on 1296 than on the lower bands and stays open longer, something akin to tropo conditions when 1296 could be well open but little happening on the lower bands. An unexplained phenomenon with aircraft enhancement is the "hole in the middle" — i.e. a drop in received signal strength halfway through the contact and appears to be more pronounced on 1296 than 432.

Power levels are reasonably high but a good mast-head amplifier is more useful than extra power. Ed VK1VP runs 220 watts to four 50 element yagis at 6 metres high, Lylec VK2BEs power is similar. Ian VK1BIB runs 15 watts to two 50 element DL6WU yagis at 7.5 metres and whilst not as strong is usually Q5.

On 3/4/92 VK3TBN operated portable from Mount William using a dish mounted on a trail-

er and worked VK3KAJ, VK3ALZ and VK3ZJC on 1296. Danny VK3KKW went portable on 19/4 and activated squares QF23 and QF13 on 1296. Ian VK3ALZ is operational on 2304 MHz with CW and FM and is now making a similar setup using SRDs on 3456 MHz.

The FTAC list at 28/03/92 shows 110 operators throughout Australia with 1296 MHz capability, 26 on 13 cm, 10 on 9 cm, 7 on 6 cm, 27 on 3 cm and one on 1 cm, where it must be lonely for VK2YOD! I would appreciate any reports from VK4, VK6, VK7 and VK8 indicating the form of activity taking place in those areas on bands above 50 MHz.

Closure

Just before closing, it was interesting to note that at the end of June there was a six metre opening to Japan around 0200 and a few 2Ls were there for the taking. Also, the time is right for possible winter time Es openings.

Closing with two thoughts for the month: There's nothing wrong with the younger generation that becoming taxpayers won't cure and Winter is the season in which people try to keep the house as warm as it was in the summer, when they complained about the heat. 73 from The Voice by the Lake.

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AMSAT Australia

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National co-ordinator

Graham Ratcliff VK5AGR

Packet: VK5AGR @ VK5WI

Please take note of the AmSAT information nets:

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Control station VK5AGR

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Bulletin commences at 1000z

Frequencies: Primary 7.064 MHz, plus/minus 5 kHz.

Secondary 3.685 MHz.

AmSAT South West Pacific net:

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Satellite users whether experienced or newcomers will benefit by subscribing to the AM-SAT Australia newsletter and software service. The newsletter is published monthly by Graham VK5AGR. Subscription is \$25 for Australia, \$30 for New Zealand and \$35 for other countries by AIR MAIL. It is payable to AM-

SAT Aust. addressed as follows: AMSAT Australia, GPO Box 2141, Adelaide SA 5001.

The newsletter provides up to date information on all current and planned amateur radio satellite activities. Graham also provides a first class software service for satellite users. New software is reviewed regularly in the newsletter.

AMSAT Australia subscriptions

It's been brought to my notice that somehow an old header appeared on last month's column. This listed the subs at the old rate. Due to increased postal and duplicating costs Graham has reluctantly had to increase the subs. The new subscription rates appeared correctly as above in the April and May columns but I must have called up an old macro when typing the last column. Sorry about that, the offending file has been removed from my system. I hope it didn't cause Graham too much embarrassment.

STS-50 and the SAREX

As I write this column the latest Sarex mission is under way. On Friday 3rd July I took part in one of those wonderful group exercises where Murphy took a holiday and everything went right.

Through the tireless efforts of Graham

VK5AGR, our club, the RAAF Williams Amateur Radio Club (RWARC) was allocated a scheduled time slot on the SAREX mission. RWARC operates from the Laverton Air Force base in Melbourne under the call sign of VK3APP. Being centred around the RAAF Radio School and having a large student membership component it qualified under the 'sarex in schools' section of the mission.

Over the preceding weeks many club members took part in working bees to ready the club station for the big event. As the day approached we were a bit apprehensive to say the least as much conflicting information was circulating around the traps regarding antenna problems etc on board Columbia.

However on the Friday afternoon and barely an hour before the first pass we received a fax direct from NASA setting out all the details we needed to know regarding frequencies and times along with an hour-old set of Keplerian elements. All other scheduled VK stations received this same fax and I'm sure I speak for them when I say how relieved we were. At that time no-one at the club had even HEARD a signal from Columbia.

With our club room full of bodies we made brief contact on the first pass and confirmed our schedule for orbit 124. Signals were full quieting and for the first time we all felt confident of a good quality contact. The excitement was building as we watched the Instant-track footprint approach our location. Video cameras and audio recorders were running, we had a totally redundant backup radio system including tracking antenna at the ready in case of explosions or worse.

Right on time virtually to the second we heard Ellen Baker KB5SIX calling us from Columbia with a good clear signal and the long planned contact was under way. It ran for the entire pass from horizon to horizon and could hardly have been better. The voice quality from Columbia was excellent and signals were loud and clear all the way. The students were buzzing with excitement as they left and no doubt within a few minutes the whole Air Force base would have been aware of our contact with the space shuttle. It was a fine club effort with many people contributing to bring about a most successful, unique and profitable learning experience.

OSCAR-10

The old warrior is still giving surprisingly good value. Now the oldest amateur satellite still in service, OSCAR-10 continues to deliver the goods. Excellent contacts are to be had as long as the range is not too great. Signals have been strong for some time now but watch for any signs of FM-ing on the beacon or signals. This will indicate that shutdown is imminent and transmissions should cease at once. OSCAR-10 shows no signs of faltering from its present 3 month on, 3 month off self-imposed schedule and if we treat it well it may continue to be a very useful satellite for years to come. We may have another 'Voyager' on our hands!

OSCAR-13

As I mentioned last month, this bird is improving week by week. I've recently heard JA and W stations at 20 dB above the system noise floor. Just like the old days of OSCAR-10. There have been good openings to Europe from southern Australia. Squints have been down to less than 20 degrees for periods of an hour or more on some passes. The number of regular VK users is increasing so the word must be getting around. We can expect more stations in the northern hemisphere to start looking to the south as the word is passed around up there. Unfortunately we are not yet seeing the orbit anywhere near apogee. The apogees are still too far north, about 50 degrees north latitude. As the apogees move to the south we should start to see more of mode J and S in southern Australia. About the middle of 1993 conditions should start to become very good for inter hemisphere DX on OSCAR-13.

Arsene

For the first time a 'fairly firm' launch date for this long awaited satellite is being circulated. Reports have it that it will be launched

on Ariane flight V55 in November this year. It promises to be a most interesting and unusual amateur radio satellite. It will be the highest of all OSCARs. Its apogee will be about 36000 km and perigee about 20000 km. It will orbit around the equator. Its period will be about 17.5 hours. If you want to have a look at the shape of the orbit on your tracking program, key in the following 'keps'. They are not real and they will not show you where Arsene will be at any specific time but you can fast forward and see what service you can expect from this satellite. I think you will be quite surprised.

Epoc 92 000.00000000

Ecc 0.2355

M Motion 1.361

Inclination, right ascension, argument of perigee, mean anomaly, decay rate, orbit number and anything else your program requires can be entered as zero. The orbit shape will be modelled by the Eccentricity, Mean Motion and Inclination but of course it cannot show you exactly where the satellite will actually be at any particular point in real time.

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Awards

John Kelleher VK3DP — Federal Awards Manager

WIA DXCC Award

During the last few months, I have had several requests to outline this award, and to clarify the requirements necessary to submit a claim for it.

I have also had a challenge to its integrity as an internationally recognised award.

The general rules which apply are parallel to the ARRL DXCC Award, with one exception. After the submission of QSL cards for the initial 100 or so countries (which cards must be sighted and checked by this office), additions can be made using a verified list of contacts. The submission of QSL cards for additions to DXCC standings is not necessary, but some operators may, at their own discretion, send the necessary cards as long as sufficient return postage is enclosed. This system has been operating since the inception of this award, and has rarely been challenged.

The general format for making DXCC applications is to submit your list of contacts in alphabetical (DXCC list) order, and divided into the three separate headings: SSB, CW and OPEN (or Mixed). To me, it is tedious and time consuming to have to separate these three headings from a sometimes substantial list of contacts.

When some of our more ardent and hard-working DXers have reached totals in excess of 300 countries, I will now find it necessary to visually check the final 20 or so QSL cards for entry onto the DXCC standings, which will

now be published more frequently, due to the fact that the complete list of standings is now on database at the Federal Office. It is also my intention to publish information on those operators who head the listings in all three categories, plus RTTY.

Sevilla Universal 92 Award

The Spanish national society URE is sponsoring this award in connection with the Universal Exhibition Sevilla — EXPO92. It is available to amateurs and SWLs world-wide. Various prefixes have to be worked to amass points as follows:

Each AM7, AN7 and AO7 contact	1 point
Each AM92, AN92 and AO92	2 points
Special station EF92EXPO	5 points

A contact with EF92EXPO is mandatory. Each station may be worked more than once per band/mode to gain extra points, but there must be at least 24 hours between such contacts. All bands, including WARC bands are valid. Points required are as follows:

Spanish stations	100 points
Other EU stations	75 points
USA stations	50 points
AF and Asia stations	40 points
Other areas	25 points

Contacts for the award must be made during the period 5th May to 12th October 1992. Send log details before 31st December to: URE Sevilla

PO Box 479, CP-41080 Sevilla, Spain

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Pounding Brass

Gilbert Griffith VK3CQ 7 Church St Bright 3741

Hands up if you know what a Yamaha TT350 is.

For those readers who didn't put their hand up, I will explain that a TT350 is an enduro motorcycle designed for high speed bush (track) bashing. I am not afraid of offending "greenies" but riding off the tracks is considered stupid even among the motorcycle fraternity. As you can probably guess, this pastime is commoner with teenagers than with Morsiacs, and anyone over 35 or so is classed as a veteran rider when entering events. My own TT350 is 5 years old now, but aside from numerous scratches in the plastic guards, it is in mint condition with only 3 to 4 thousand clicks on the clock. I have enjoyed learning to ride and had many memorable "moments" in enduros, trail rides and practice. I can hardly describe the thrill I have experienced on achieving the top of a particularly nasty hill for the first time after many failures (that means painful falls!). No matter how suicidal it may sound, I have experienced a euphoria in rocketing down a wet dirt track in excess of 100 kph and suddenly realising, "Hey, this is dangerous", and later wondering how I managed to negotiate corners at that speed.

Any normal person of my age would be leaving that sort of thing to younger men who would not consider the bad things that could happen. I really knew that falling off was likely, and still is, and I have been trapped under the machine, and even knocked unconscious for a couple of minutes, regretting that particular fall for a few days too. But I always wanted to ride so I think positively about it, and if I fall off on a hill I just keep at it until I succeed. Besides, falling off while going uphill is much safer, easier too.

One of the best lessons I learned early about riding was not to try to ride fast but to concentrate on technique, balance and control at a comfortable speed even if it was only a walking pace at first. An experienced racer wrote that advice in a motorcycle magazine. After a while I found that I was using more power (sometimes all that the bike would give) and some of my young friends were having trouble keeping up when it seemed to me that I was just cruising. Now I am doing "get fit" things like running up hills and giving up smoking (6 months so far...hooray) so that I can ride harder and longer without hurting so much. So now when our club has a motocross day I am able to have 4 or 5 prac-

tice laps of the course without collapsing in a heap from exhaustion. Far from it, it is great fun.

By now you must be asking, "What the heck has all this kerfuffle got to do with pounding brass?" And I will admit, "Not a lot".

But it has a lot to do with attitude, endeavour and success, at least I think it does.

Take a look at your average Prospective Amateur. He (she or it) has heard from somewhere that it takes 40,000 repetitions of each letter to learn Morse code, and effectively says to himself, "Impossible, I'll never be able to learn". Or a rumour starts up that there will shortly be a no-code licence and he says, "Hey, that sounds good to me, I'll push for that". There are limitless excuses put forward for not doing something.

On the other hand, one may take a lesson from not only my own experience with motorcycles (which real motorcyclists would call a joke — but who cares?) but with Morse code too, and say things such as, "If others can learn it, so can I". In my case I knew that others had learned the code, and living in the country I did not know that the task was impossible these days, so I started to learn, with a firm belief that I would eventually be successful.

The same goes for using the code on air. If you take the advice which was given to me just after I passed the Morse test you will learn quickly and enjoy the experience without worrying that some people might think you are a lid. That advice is simply, "Make the effort to have three contacts every day in Morse code". I can assure you that in a very short time three contacts will not be enough for you, at which time you will no longer suffer from "nerves".

Even before sitting for any of the amateur exams the most successful and enthusiastic people will have built a crystal set or receiver and maybe other things besides, and anyone who has built their own equipment will chat about it for hours especially willing to relive the moment when something first worked.

Finally, before you throw away your key forever, read "The Horrors of CW" by Julie Kentwell (AR July 1992 P32) for another opinion.

P.S. If you are thinking of taking up trail riding, get the right protective gear such as helmet, goggles, boots, knee and elbow guards and/or full armour, and take it easy: especially if you are a veteran (over 40) like me. If you don't get hurt it will be a miracle.

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Ken Matchett VK3TL Hon Curator, WIA QSL Collection
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CHAGOS ARCHIPELAGO

The Chagos are a scattered group of small islands and coral reefs lying south of another interesting DX group — the Maldives. Chagos lies south of the southern tip of India about the same distance as Brisbane is from Melbourne. The country was originally a dependency of Mauritius but after the declaration of independence (in 1968) of that country became part of what is known as the British Indian Ocean Territory.

VQ8AS

In 1936 the islands of the Chagos Archipelago were rare DX indeed, that is, until two young radio operators from Mauritius, Leny Mazery (VQ8AB) and Paul Caboche (VQ8AS) commenced operation. The two stayed at Paul's father's home on Boddam Island some 200 km or so north of the main island, Diego Garcia. Leny was invited by the resident manager to set up an amateur radio station primarily for communication with Mauritius. An account of their operation has been given in "The DX Magazine" of November 1991 under the title "Chagos Revisited" by Marv Gonsior W6FR. The first transmitter was a single tube tuned grid tuned plate oscillator operating with an input power of between 4 and 12 watts.

The antenna was a 132 foot long wire at-

tached to a 30 foot steel tower which Leny had transported from Mauritius. The call sign VQ8AS was, in fact, allocated to Paul by Leny himself since the Postmaster General in Mauritius knew nothing of amateur radio. The station was powered by a bank of wet cells providing about 150 volts for the receiver and up to 250 volts for the transmitter. At night the equipment used local power. Batteries were charged by a small dynamotor driven by a coal gas engine that, in turn, periodically served to power the local saw mill. The receiver was a small 3 tube Philips TRF. One stage of RF amplification, a valve detector and two stages of audio amplification were used as indicated on the QSL (RX. 1-V-2). The first call was answered by VK2HV quickly followed by VK3MR ("Snow" of Clyde, Victoria, still very active and known to most Old Timers). The QSL shown was sent to Ivor VK3XB, for a QSO dated April 1937.

In a letter to the author, Paul recounts his call for help after being threatened by the locals during a native uprising. His call was answered by FB8AD who reported the incident to the authorities on Madagascar who in turn alerted the Government in Mauritius. A nearby steamship was diverted to the Chagos. The ring leaders were tracked down and taken to Mauritius without ever knowing how the intervention was accomplished with such rapidity and effectiveness.

When World War 2 broke out Paul was sent to the Chagos in order to set up a wireless station. He recalls that he had to insist that he take his own amateur radio gear with him to Diego Garcia rather than use the inadequate military equipment that Paul described as a "museum piece". His own gear worked well until proper military gear arrived one year later. After three years he was called back to Mauritius to work on the Royal Navy radio installation there. Later he worked underground having been trained in sabotage. He played a part in the landing of the Free French on Reunion Island which at the time was held by Vichy French forces. Paul writes further "I am going to send you, Ken, all of my pre-war QSLs as VQ8AS (Chagos) and VQ8AD also, as I know they will be destroyed at my death as nobody is interested in them". (The cards were safely delivered into the WIA collection in May 1992). Paul's pre-war activity from Chagos was noted in QST of October 1937 thus: "Even if you have worked Mauritius, don't pass up VQ8AS just because he uses VQ8. It's another country for you". Paul was quite an active operator and a very reliable QSL-er. It is interesting to record some of the Australian stations who managed to have a QSO with him at the time. Several have become "silent keys" but three or four are still active on the air. Their QSL cards show the following call-signs: VK5RX (George Luxon), 3CN (Chas Harrison before returning to VK7), 3RN (Ron Higginbotham), 3BZ ("Morrie" Morris), Reg Sankey (3XP), Fred Bail (3YS), 2XQ (John Trail), 2HV (Harry Hutton), 3FZ (Frank Maher) and 3XB (Ivor Stafford). Paul now resides on Mauritius his call being 3B8AD, (formerly VQ8AD).

VQ8CB

Just as Paul had activated Chagos before the war, it was Leny who put the island group on the air in the post-war period with the call VQ8CB. His operation started in late 1947 and continued until his departure from the island in 1955. Actually the first post-war activation was, Paul informs me, by France Dumont between 1945 and 1947. His call was VQ8AM. However, his operations were confined to low frequencies primarily for communication between the island and Mauritius. Leny's QSL as shown indicates that he was using the popular 6L6 valve as an oscillator with an 807 as a power amplifier. This gave an input power of about 50 watts. His receiver was an NC SW3. The initials stood for National Company, Short Wave 3 valve receiver. (The equipment codes of those early days certainly gave more information about equipment than do modern ones!). The SW3 was a small box in the shape of a cube with headset output. Advertisements for this receiver started to appear in radio magazines in 1931. It had one stage of AF, full AC or battery operation with 6V heater tubes. With its excellent signal to noise ratio it was an inexpensive and popular choice of receiver.

You Radio Friend VK 3 X B : UK 14 Mc Sig were
RST 569 On 23/4/37 at 1550 GMT

VQ8AS

1 - V - 2
XTR.
12 Watts
1 P + G
Valve P + H
Aerial 200 Yards

Q R A : P. CABOCHE
SALOMON ISLANDS
ARA VOS ARCHIPELAGO
C/O VQ8AF, Box 163
PORT LOUIS, MAURITIUS

T N X Q S O - V y 73 es dx Paul OP.
P S E - T N X Qsl.

To Radio YK3BZ. This cfm QSO on 3/12/51 at 1030 G.M.T. 14 Mc Band
 PHONE R 4/5 S 6/7 mod. OK.
 Rx-NC SW3 XTR 6L6-807 QTH: ~~8XKATYANTUS~~ Box 155
 8CB CHAGOS ✓ P. LOUIS MAURITIUS ✓

Q8AB

Old QSO on Phone Morrie hpc mui QSO for Igo 10/43

It will be seen that Leny has modified his former Mauritius pre-war call sign of V8AB to VQ8CB, the old V8 calls having been changed to VQ8 in early 1938. The QSL was for a QSO in December 1951 with 'SK' Maurie Morris, VK3BZ on 20 metres phone.

VQ9JW

Since Leny's activities, there have been several radio amateurs on Chagos. In August 1962 "Gus" Browning W4BPD used the call VQ9A/8C but the next year QST announced that DXCC credits for this operation would be deleted due to the lack of proper licensing procedures. Another DX-peditionist, Don Miller W9WNV used the call VQ9AA/C during January 1967. Harvey VQ8BFC (1964) and VQ8CDC (1967/68) were quite active. At the time, QST reported that the purpose of three (rather than two) letter call signs was for the last letter C to indicate Chagos. There has been

quite a fair amount of activity since 1970, at about which time the official call sign prefix changed from VQ8 to VQ9. Most of the operators were American personnel. A few operated using their state-side calls portable VQ9. RAAF member, Alex VK5CCT operated as VQ9CCT in October 1980. Almost all calls originated from the defence facility on Diego Garcia. The WIA collection does however, hold the QSL VQ9DW, the first Joint Services Underwater Expedition 1972-73 operating from the Egmont group of islands to the north.

The QSL shown, VQ9JW is dated June 1980 and was received by well-known DX'er Tom Laidler, VK5TL. Diego Garcia is shown as a somewhat horse-shoe shaped island. It lies to the south east of the majority of the islets making up the archipelago. In 1966 a long term lease had been negotiated between the US Government and Britain for the use of the island as a strategic defence facility. It has a har-

bour and an excellent airstrip. The island itself is a rather narrow coral atoll complete with typical coconut trees, beautiful white beaches and a blue lagoon — not the least attractive location for an overseas posting.

Author's Note

These series of articles on the history of amateur radio depend in part, upon information gained from QSL cards kindly donated by radio amateurs throughout Australia and overseas. All QSL cards are welcome. Please get in touch with the author who is the honorary curator of the collection if you would like to offer your help.

Thanks

The WIA (Victorian Division) would like to thank the following for their donation of cards to the collection (Supplementary List)

Alf	VK3LC
Bill	VK6WY
Mike	VK6HD

Also the family and friends of the following "silent keys" (Supplementary List)

Bill Faul	VK3AGZ
"Monty" Nell	VK2JQ
Doug Burrows	VK3BZC
Alex Taylor	VK3AT
Roy Knott	VK5PDY

2F

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Education Notes

Brenda M Edmonds VK3KT — WIA Federal Education Co-ordinator
P.O. Box 445, Blackburn 3130

Lately I have taken a fresh look at some of the books available for training or as introductions to amateur radio, in an attempt to be able to provide recommendations to aspiring amateurs who are unable to attend formal classes. Both the ARRL and the RSGB produce a small range of such publications, and a few others come to mind but there are only a few that are directed specifically towards the Australian Novice qualification. More on these at a later date.

The ARRL publication "First Steps in Radio" by Doug DeMaw, W1FB, was first released in 1985, and has recently become available as the second printing. I had not previously been able to examine it closely. In 85 pages of A4 size, it provides a fairly easy-to-read text which includes a lot of theory interspersed with operating hints, construction technique advice, and traditional amateur radio lore.

The theory sections, about 16 of the 19 parts, do not assume any previous knowledge. They cover most of the content of the Aus-

tralian Novice syllabus, but do not treat it in the depth which I would recommend for a candidate. Admittedly most parts end with a recommendation towards further reading (generally from the ARRL Handbook), and it is frequently re-stated that the book is intended only as an introduction. The explanations that are used are generally clear and simple, and the diagrams although sometimes small are clear and well labelled. The really useful items are the glossaries, one per part, which define the new terms used in that part, both technical and jargon. Cartoons in the headings and occasionally elsewhere lighten the tone a bit, and there is a good range of photographs of components. But there is a lot of plain reading on many of the pages, which some beginners find discouraging.

In all, as an introduction it serves the purpose. It is not a "stand alone" text for a candidate studying for a Novice licence, but it may well encourage the candidate to "have a go" at some simple constructions, and it will help

the beginner make sense of much that is not clear to someone just starting to do some listening around.

My thanks to Stewart Electronics for the inspection copy. (RRP \$10.00)

On a vaguely similar theme, I wonder if any reader can supply some information which I have mislaid (or lost in one of the recent moves). About 6 — 8 years ago, I was notified of the production of an amateur radio training text on audio tape that was said to be a "first" in that it had been done directly onto tape, not produced as a book and then taped. A couple of recent requests for assistance for blind students reminded me of its existence, but no more. Can anyone out there help, please? If any reader knows of similar aids for such persons, I would be very pleased to hear of them. I am sure that the market for such items would not be limited to the visually handicapped. Perhaps my next project should be the compiling of a Resource Directory for students.

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The 19th South-East Asia Net Convention

Tan Lian Huat 9V1OD

The 19th South East Asia Net (SEAnet) convention was held at the Empress Hotel, Chiangmai, northern Thailand over the weekend 8 — 10 November 1991. This was the fifth time that the Radio Amateur Society of Thailand (RAST) hosted this major annual event. The previous conventions organised by RAST were held in Bangkok and this year's venue, Chiangmai, was indeed a pleasant change.

More than 300 participants from 17 countries took part in the 3 day event. The opening ceremony was officiated by Mr SOMBUT UTHAISANG, HS1ISU — Director General, Post and Telegraph Department of Thailand. This was followed by a welcome dinner during which participants were treated to colourful northern Thai cultural dances.

The second day's events were

- a. A country drive to Doi Suthep Mountain and the Meaw hill tribe village;

- b. Visit to the industrial handicraft village, with a sumptuous buffet lunch in between the above.

At the grand banquet dinner, ISAMU KOBAYASHI JA0AD presented the traditional video/slide show featuring SEAnet personalities. Delegates from several countries then contributed to the night's merriment with their songs. In particular, THIDA HS1AIA and SUVIT HS0XH and their group did a great rendition of their own composition, "Far Away in the Sky". Door prizes and souvenirs were given to all present.

The third day saw a very interesting presentation "THAI SATELLITE — its design capabilities and application" by Mr WICHIAN MEKPRAKAN N6QYK. This included two video films on satellite launches.

By tradition SEAnet control station operates from the convention site. This year was no

different with HS5SEA being the official station at the Empress Hotel.

At the closing luncheon, RAST president, VIKROM RUNYASHTHITT HSHB announced that there were two offers to host SEAnet 92. These were DARWIN (Australia) and SHANGHAI (Peoples Republic of China). By a majority vote it was decided that the next eyeball QSO will be in Darwin. The president then thanked all participants for making this year's convention a success and wishes all a safe journey home.

The 20th SEAnet Convention will be held in Darwin from Thursday 29 October until Saturday 1 November 1992. More details may be obtained from Jim Jones, VK8JJ, Secretary — SEAnet '92, PO Box 37173, Winnelie, NT 0821.

(SEAnet meets on 14320 kHz (+/- QRM) at 1200 hrs UTC daily).

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WICEN

Leigh Baker VK3TP WIA Federal WICEN Co-ordinator

National WICEN Bulletin Board Network

Introduction

With the advent of computers and data communication it is now a relatively simple process to exchange information quickly between groups of Amateur Radio operators around the country or, for that matter, the world.

As the various WICEN Divisions have undergone changes in their structure and in the way they carry out their duties they are often trying to re-invent things that have already been done by another State. Apart from being a waste of resources this is a long and tedious process. The WICEN Co-ordinators agree that a national forum is also required for discussions on many subjects such as national WICEN Standards, Net Control operation, maximising field efficiency, new training techniques, research into new technologies, administration, procedures etc.

The only way that WICEN can function efficiently as a National entity is to maximise its communications between Divisions and with other appropriate organisations.

Inter BBS conferences

After much discussion and behind the scenes work, WICEN is pleased to announce that 4 Divisions have worked collectively as a team and have arranged National echomail conferences through local phone Bulletin Board Systems. WICEN wishes to thank publicly Brian Wendt from Brisbane, Mick Howland VK6ZMF in Perth, Graeme Broadbridge VK2YUI, Mike Kearnes and Eric van der Wyer VK2KUR from Sydney for allowing the use of their systems as part of the nationwide network. David Tilson VK3UR is system operator of the WICEN Victoria BBS located in Melbourne.

While the WICEN general echo is freely accessible through the BBSs, the other areas have restricted access due to the discrete nature of the contents. Any other BBS that wishes to echo these areas should apply through their

Divisional WICEN Co-ordinator or to the Federal Co-ordinator.

Central BBS

At this time the WICEN Victoria BBS is being used as the central node from which all other BBSs receive and forward their information as it is the only BBS dedicated to WICEN only matters and therefore has been designed exclusively for WICEN purposes.

BBSs currently linked into the WICEN phone network — see table 1.

Who can access WICEN BBS information?

Anyone! All that you need is a computer, phone modem and any type of communications software. Throughout the network there are several levels of information and access for different groups, ie General public, WICEN members, Region Co-ordinators, Special Project Groups, WIA Administration. Access to information at higher levels is by pre-arrangement. For more details see one of the Boards or write to any of the WICEN contacts.

Inter-network traffic

For those people who cannot directly access the above BBSs but do have access to either Fidonet or Internet please feel free to use the addresses below:

The prime FIDO address of WICEN is 3:632/404.

The prime ACSNET/AARNET/Internet address of WICEN is VK3TP@CSOURCE.OZ.AU.

WICEN is also actively involved with data communications through the AARNET/Internet Network and the Australian Disaster Management Information Network, but more information about these in future notes.

News from WICEN (NSW) Inc.

D. Horsfall VK2KFU

WICEN (NSW) Publicity officer

August is quite a busy month for WICEN (NSW) personnel, with many events in the Calendar, and there have also been a number of significant achievements. What follows is information garnered from the regular WICEN

nets, the VK2 Divisional broadcasts and various WICEN internal communications.

WICEN was recently asked to undertake two significant tasks. Firstly, the State emergency planners have asked WICEN to provide communications for thirty five evacuation centres and control points as part of the Nepean-Hawkesbury Flood Plan.

Recently WICEN was tasked by the Sydney South Division of the SES to provide communications for up to twenty evacuation centres and welfare sites in the Lansvale, Rossmore and Badgerys Creek areas.

WICEN now has clearly defined and definite roles within the NSW Disaster Plans. WICEN is actively looking for members in the western areas of Sydney and the Blue Mountains to assist in implementation of these plans. The revitalised WICEN team has become the most

School of Electrotechnology Amateur Operators Certificate of Proficiency (AOCP)

COURSE OBJECTIVES

To prepare participants to sit for the AOCP examination, which provides the legal requirement to operate an unrestricted amateur radio station.

This includes both radio theory, sending and receiving Morse code at a speed of 10 words per minute. The facilities of the RMIT Amateur Station VK3MT, will be used to familiarise participants with DOTAC REQUIREMENTS.

COURSE DURATION - 48 HOURS

This course will consist of one day a week for 6 weeks or an evening session conducted once a week for 12 consecutive weeks. Block attendance of six days may be arranged for a group of 10 or more participants.

1992 COURSE TIMES AND DATES

August 7th, 8.30-5.30, 1 day p/w for 6 weeks

October 7th, 5.30-9.30, 1 night p/w for 12 weeks

October 9th, 8.30-5.30, 1 day p/w for 6 weeks

Please Book Early

ENROLMENT ENQUIRIES

Course Information Officer, School of Electrotechnology

Phone (03) 660 4425 Fax (03) 662 2525

RMIT is now a University incorporating Philip Institute of Technology.

Royal Melbourne Institute
of Technology Limited
GPO Box 2476V
Melbourne Vic 3001

RMIT

TABLE 1

	BBS	BBS number
New South Wales	The Serviceman BBS	(02) 698 1565
	The North Sydney Packetgate	(02) 954 0934
Victoria	WICEN Victoria BBS	(03) 802 0913
Queensland	SunMap BBS	(07) 393 0311
	Ampak Northgate	(07) 263 7070
Western Australia	Perth Omen	(09) 244 2111

Other systems are being investigated for use in South Australia, Central Australia and the Australian Capital Territory.

prominent public face of the Amateur Radio Service, the public face that is showing just how the Amateur Radio Service CAN assist the community in time of need. WICEN is establishing new regions in Sydney's west, and needs volunteers and leaders to form these new teams. If you would like to be part of these new teams, particularly in Sydney West, contact John Buxton, VK2GJB at (02) 621 2762, Morton Williams, VK2DEX at (02) 646 1187, or Philip Greentree VK2IW at (049) 47 1202.

Planning for WICEN's involvement in the International Six-Day Enduro, the World Championship of motor cycle enduro riding is well under way. The event is to be held from Tuesday 25th August to Sunday 30th August, and WICEN requires operators for voice and packet stations as well as special marshals who need to be both competent enduro riders and licensed amateurs, since they will actually be on the course during the events. Their role is to provide the primary medical radio safety net communications from very difficult areas. This will be the event of 1992, so if you would like to be part of the World Championship happenings, contact the WICEN Hunter Region Co-ordinator, Simon Clowes, VK2TSC, at QTHR or (049) 48 9566 at your earliest opportunity.

WICEN has been asked to provide medical safety net communications for the MMM-FM Marathon to be held in early November. The event is to be run along the coastline from the start at Bayview, finishing at Manly. The event will pose a considerable challenge to Sydney North Region. For further details, contact the Sydney North Region Co-ordinator, Barry White, VK2AAB, at (02) 487 1428.

A number of WICEN regions are keen to build mobile communications and need your assistance. If you have an old caravan that, whilst being roadworthy, may not be up to the standard for taking on any further holidays, do not let that unneeded caravan rust away in the back yard. Donate it to WICEN who will put it to good use. After some handy-work by willing volunteers, the van could soon be up to standard, and registered as a communications van for field use by the various WICEN regional teams. If you can assist, contact your region's WICEN co-ordinator, or phone State Co-ordinator Philip Greentree VK2IW at (049) 47 1202.

The Annual General meeting of WICEN (NSW) Inc will be held on Saturday 15th of August at the Sydney North SES Division HQ, corner of Leonard and Hornsby Streets, Hornsby, starting at 1300 hours. It is anticipated that a Co-ordinators meeting will be held during the morning of that day.

Here is a calendar of forthcoming WICEN events, along with their commanders. Please note that some of these events are yet to be confirmed:

Annual General Meeting
City to Surf race
Batemans Bay car rally
St Albans Horse Endurance Ride
International Six Day Enduro
Hawkesbury canoe Classic

Note that at the time of writing there is no event co-ordinator for the City to Surf Race, so hopefully somebody will volunteer soon. Also, please note that there are several "clashes" in these dates; the WICEN AGM and the City to Surf race are on the same weekend as

15th August
16th August (no commander yet)
22nd-23rd August (VK2XNH)
23rd-29th August (VK2TV)
25th-30th August (VK2TSC)
17th October (VK2IW)

the Remembrance Day Contest; the St Albans Ride coincides with the International Six Day Enduro, and once again the Hawkesbury Canoe Classic will compete with JOTA for personnel.

ar

Spotlight On SWLing

Robin L. Harwood VK7RH
52 Connaught Cres., W. Launceston 7250

Well, Springtime is almost upon us, although as I'm compiling this, we are being battered by a fierce thunderstorm and gales in mid-winter. Hopefully, the buds will be appearing and the daffodils will start blooming again.

In the June issue, I made mention of Radio Australia putting out a signal on exactly 21000 kHz on April 21st. Since that was published, the Northern Territory Section of the Broadcasting Division of Telecom Australia has written and confirmed that it did indeed occur. The staff conducted a test the next day to determine the relative level of the test load signal to that produced from a transmitter operating into an antenna on 21525 kHz. An investigation of possible causes of the radiation of signals, while operating on test load was conducted. The culprit was not exactly the dummy load as radiation from the test load is negligible because of its construction and effective shielding. The transmission lines are another matter. I quote from the very extensive information, so kindly forwarded to me by Mr Graham Baker of the SA/NT Broadcasting Division of Telecom Australia.

"The amount of radiation from open wire transmission lines depends on effective cancellation of the fields generated by the RF current in each conductor. When the transmission line spacing is an appreciable proportion of a wavelength this cancellation is not complete, similarly if the currents are not perfectly balanced in each conductor total cancellation does not occur. The estimated power radiated as a result of incomplete cancellation as a result of 400 mm spacing at 21 MHz while operating at 250 kW is in the order of 35 watts or about -38 dB. Current imbalance is normally in the order of 1% or so, and would add also to the power radiated."

Tests conducted on the transmission lines between the Transmitter building and the matrix switch run parallel to each other, so cross coupling can be normally expected to occur. Tests on adjacent lines over their full

length have shown coupling to about -30 dB. So adjacent lines could carry the radiations to any antennas connected to the transmission lines.

"It is therefore expected that normal operation into the test load will cause a signal of significant proportions to be radiated and that while in-band operation would not normally cause a problem because of the high signal level of other broadcasters, out of band operation into the test load may cause problems. As a result, operation into the test load will now only occur on frequencies within recognised international broadcasting allocations," Mr Baker concluded. One up for the IARUMS! Once again, my thanks to the Telecom Broadcasting staff in Darwin for the extensive background information they forwarded to me.

Incidentally Radio Moscow World Service is now carrying religious programming. Yes that's right! At 0430 and 2030, they carry a Japanese religious programme in rather fractured English. The diction is terrible, making it extremely difficult to comprehend what the speakers are on about. As far as I can make out, it is a mixture of Christian and Eastern philosophy with a Japanese address given during the programme.

This Winter, daytime reception on HF of the international broadcasting allocations has been exceptional, particularly from Europe, the Americas and the Mid-East. Signals on the 41 and 49 metre band were also interesting, particularly around my local midday time, when they came across the Antarctic regions, judging by the noticeable flutter on signals. However, it is becoming increasingly apparent that the Sunspot numbers are in sharp decline with the higher frequencies dropping off or not propagating at all. I do notice that I can receive the American Time Station, WWV in Fort Collins Colorado on 20 MHz only on the vertical.

Well, that is all for this month. Until next time, the very best of 73 and Good Monitoring!

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Contests

VK-ZL Oceania DX Contest 1991

VK-ZL CW RESULTS

* = equals top call area score

= equals top band score

CALL	160M	80M	40M	20M	15M	10M
ZL1A1H*			#203040			
ZL1HV		1280	500	8190	10744	9006
ZL1VD		240	125	5695	51952	480
ZL1BN			550	800	15048	12864
ZL2AGY*		1440	18700	23375	67784	16936
VK2APK*	#120	3520	155000	123151	90300	84096
VK2AIC		350	20	25	950	2652
VK2DID		500	360	7448	18630	17556
VK2NV		220		240		2
VK2BQQ	80	1890	11310	23436	12194	13000
VK2PS	#120	1760	3590			1196
VK3DP*				406		4
VK3K5		90		9		
VK3XB		700		462		
VK4OD				690		10106
VK4DWA				53940		
VK4XA*		451				#245490
VK4XY			450		8	
VK4YB	#22230					
VK5AGX*				18910		
VK6ZH*				46746		142880
VK6AJ				9600	#152064	44604
VK6BB					37312	
VK6HG		350	2520	18870	7420	4620
VK6IT				11303		
VK7RO						540
VK7RY*		1260		144	512	8

PHONE SECTION RESULTS

ZL1AKY					75576	338
ZL1AAS*	280	2160	245	14729	#145486	46898
ZL1BVK		4050	45	26190	3808	76500
ZL1IM		880	30	2166	15120	15600
ZL2AFY*		6160				
ZL3TX*	#2100	3140	80	3536	1920	60
VK2APK*	60	2250	5200	80740	120528	12090
VK2ARJ		910		2451	43660	3286
VK2CCK		10	5	5412	80586	13440
VK2BAM		1890		2332		
VK2PS	640	1440		25		
VK2PWS		1400			65682	50394
VK3DZM*		57230				
VK3SW				3380		
VK4EZ				19952	13089	18
VK4LT						#304876
VK4NEF					88040	
VK4QD				441	18	5292
VK4PJ		250	5	121	4408	11560
VK4YB*	800	39500	#16600	#91200	20540	7600
VK5FOX*	160	250		36	122	136

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How's DX

Stephen Pall VK2PS PO Box 93 Dural 2158

Our plane landed with the familiar slight bump as the wheels touched the tarmac of the Sydney airport, we were home!

Still suffering from the jet lag, and barely being home for a day, I came to the conclusion that one should never go on a long holiday. This was the scene which awaited us: a broken water pipe on the property on this side of the water meter. This break was discovered only after hundreds of kilolitres of water was lost. Fortunately, the water bill will not come for another three months. Almost all the water disappeared from the swimming pool, no cause yet has been found. One suspects a perished pipe connection. The local post office had good news for me: 110 postal articles were stacked neatly in a cardboard box representing radio amateur mail, and there was another bunch of about 70 articles representing private mail. And all this accumulated in three months.

It took me three days to sort out the correspondence. Then I discovered that the deadline for the August issue of *Amateur Radio* expires in five days time. A quick summing up of the situation resulted in producing the column for this issue.

I apologise to my readers if this present column is not up to the usual standard, but I am sure you will understand the situation. I present the news as I find it, with some "on air" information mixed into it.

And how was the trip? you might ask. I visited eight countries in the middle of Europe, and met more than a dozen radio amateurs (mostly DXers). It was an enjoyable, interesting, informative journey with a lot of learning experience. I will tell you about it in a separate article later. But now, here is the news.

Wake Island — KH9

After one week activity on this island by Sam N1MPD, Jim VK9NS, became active on the island as WR1Z/KH9 in mid June. He is using his American call sign, because he had no time to convert it into a KH9 callsign. QSL direct with SAE and return postage to: PO Box 90, Norfolk Island, 2898 Australia.

Willis Island VK9W and Mellish Reef VK9M

A short note from Jim VK9NS informs me that, subject to adequate funds (\$A 20,000 is said to be the target), this expedition will take place in the middle of August or in September. So far there are four volunteer operators and the relevant Australian authorities have given their written permission for landing on the



Steve VK2PS in front of DARC HQ, Germany.

reef. The callsigns to be used are: VK9MM and VK9WW. Send your donations urgently to the above Norfolk address if you want the expedition to be a success. Remember charter boat charges must be paid in advance and they are not cheap these days.

The Whale Festival — VI4FOW

The boys of the Hervey Bay Amateur Radio club are busy again. Due to the success of the 1991 activity, a similar event will take place this year in the month of August. See details of this special activity under "Awards" in the July '92 issue of AR.

Heard Island — VKO

Jim VK9NS is trying to organise a DXpedition to Heard Island for the 1992/93 summer season. However, again the biggest problem is the travelling cost. There is a possibility of participating in a commercial shipping venture, but the cost works out around \$18,000 per head. This could mean \$54,000 for three people for five weeks or \$108,000 for six people

for five weeks. Jim thinks that he will be able to secure the necessary permission to land on Heard Island, but the decision has to be made soon, to secure the boat berths. So far some DX groups and some individuals have pledged some money, but much, much more is needed. So if you want the opportunity to work Heard Island, please give generously. The address to send your donation is: HIDXA, PO Box 90 Norfolk Island, Australia 2898.

Rotuma and Other Pacific Islands

Bing VK2BCH is off again to his "lovely islands which keep him calling back". This is what he said in a letter to me dated 10 April. He is now on Rotuma Island signing as 3D2XV. Later he expects to be in Tuvalu as T20XV and later again in Western Samoa as 5W1GY. QSL only direct only with SAE and return postage to: Ronald V Crosby, PO Box 344, Forster NSW 2428.

Zone 2 — VE8PW

Peter was kind enough to let me know in a letter, that as of 6 June he will be on air from this much-sought-after zone. He can be heard usually on the Southern Cross DX Net at 11.30 UTC on 14226 kHz, but he will be active also on 17.15, 12 and 10 metres. From 1 July until the end of August, he will sign as C38PW, celebrating with this special prefix the 125 years of Independence of Canada from the UK. Peter intends to use SSB, CW, RTTY and Packet modes. He is still in need of a VK1 QSL card for his WPX Award. Hopefully our colleagues in the capital city will be able to assist him in this regard. QSL either direct with SAE and return postage to Peter Wollenberg, 125 Albertus Ave, Toronto.

M4R 1J6, Canada or via the Bureau.

Father Marshall Moran SJ 9N1MM

Father Moran passed away on 14 April in New Delhi, India, after a short illness. "The Voice of the Himalayas" (see AR Sept 1991 issue) became a silent key. He operated amateur radio for more than 40 years and would have been 86 years old on 29 May. He was buried in Kathmandu, Nepal on 20 April. Father Moran was a kind man, who loved amateur radio and who gave thousands of DXers a great joy by confirming 9N1 for them. He will be missed by all of us over all the Continents. His friends and colleagues have established the "Fr Marshall D. Moran SJ Educational Fund" in memory of his outstanding educational past. Send your donations to Jesuit International Missions, 2059 N Sedwich St, Chicago, IL, 60614 USA.

Future DX Activity

- VK9CB is now working on the Cocos (Keeling) Islands and is active on most of the bands. QSL via VK6LA.

- FO40A will be working on Wallis Island for the next 18 months starting 21 June.
- There is a possibility that PY0TSN will be active in August.
- Patrick F61RF is active as XU8CW from Phnom Phen, Kampuchea, until 31 August. He was heard on 14033, 14233, 18072, 21033 and 21330 kHz. QSL to: FD1GTR (FIGTR).
- YV25ARV is celebrating the 25th anniversary of the Association of Radio Amateurs of Venezuela (ARV). The station will be active until the end of the year. YV500EA will be a special event station celebrating the discovery of the Americas. QSL for both stations to YV5ARV, PO Box 3636, Caracas, 1010-A, Venezuela, South America.
- Expect some legal and official activity from Bangladesh S2 soon.
- Sany HA7VK is active as XU7VK in Phnom Penh. He can be heard at around 1700 UTC on 21315. QSL to: HA0HW, Laszlo Szabo, PF 24, H-4151 Puskoladány, Hungary.
- There is a possibility that, following the successful Navassa Island DX-pedition, several operators plan to return to the island (subject to adequate funding) in December 1992.

Interesting QSO's and QSL Information
Note: callsign, name, frequency, mode, UTC, month.

- VP5/W2HKM — Bob — 14226 — SSB — 1138 — March. QSL via W2HKM via the Bureau.
 - EA9PX — Juan — 21195 — SSB — 0912 — March. QSL to: Juan Carlos Arriaga, PO Box 2175, 11702 — Ceuta, Spain.
 - J28GG — Gabby — 14226 — SSB — 1400 — April. QSL to: PO Box 1076, Djibouti City, Djibouti, Africa.
 - 6Y5EW — Earle — 21215 — SSB — 0203 — April. QSL to: PO Box 841, Bridgeport, St. Catherine, Jamaica.
 - 5V5TS — Bill — 14262 — SSB — 0530 — April. QSL to: PO Box 7, Paradisi, 85106 Greece.
 - 3B8AD — Paul — 14226 — SSB — 1255 — April. QSL to: Paul Caboche, PO Box 467, Port Louis, Mauritius Island.
 - VK0NE — Graham — 14226 — SSB — 1222 — April. QSL to: PO Box 90, Norfolk Island, 2898, Australia.
 - OY2VO — Palle — 14280 — SSB — 0622 — April. QSL to: OZ9DP via the Bureau.
 - VK9LA — Tony — 14226 — SSB — 1253 — April. QSL to: Tony Blas, C/O PO, Lord Howe Island, NSW 2898 Australia.
 - BR1UN — June — 14226 SSB — 1158 — May. QSL to: June Larrubere, PO Box 10960, Brickdam, Georgetown, Guyana South Africa.
 - Y11BCD — Baghdad AR — 14252 — SSB — 0517 — May. QSL to: JY3ZH, Zedan Hussein, PO Box 11020, Amman, Jordan.
- From Here And There And Everywhere.
- The New Orleans International DX Convention will take place in the Royal Sonesto

Hotel between 28 August to the 30th. There will be presentations on various DX-peditions of the years 1991 and 1992. Contact W5VBX if you want to take part.

- If you worked V14SZF which was active from 10 to 12 July — that was a special event station commemorating the 50th anniversary of the "Z Force" activities. QSL with SAE and return postage to VK4CHB.
- Atsu VK2BEX was active for a few days (29 June to 3 July 92) on Mana Island OC-16 (Fiji) as 3D2BX. He made about 600 contacts. QSL with SAE and return postage to VK2BEX, PO Box 195, Killara, NSW 2071 Australia.
- There is an unconfirmed rumour that Macquarie Island could be on the air soon, but nobody has yet been able to confirm this.
- The Albanian Amateur Radio Association, AARA, has been admitted into IARU (International Amateur Radio Union).
- From 1 July to 13 July, a group of amateurs, mostly from Finland, were active from ZA activating the old callsign ZA1A. QSL to OH2BBF, Erkki Heikkinen, PO Box 53 10901, Hanko, Finland.
- Bob ZL4DO had a brief 14 hrs and 57 minutes operation from Kermadec Islands in March 92 making a total of 1238 QSOs on several bands. QSL direct to ZL4DO, callbook address.
- Karl P57KM advises that he is the QSL Manager for the following stations: ZY0SS, ZY0SW, ZY0YS, ZY0FT, ZY0FK, ZY0FZB, ZY0FCA, ZY0FMC, ZY0FMN, ZY0FCM, ZY0RK, ZY0AK, ZY0TK, ZY0TR, and ZY0TF. PY0FKL, ZY7EK, ZW7MK, S9P57ABT, ZW7AB, ZW7BX, and ZW7JN. Karl requires US\$2.00 — or 2 IRCs for direct reply, cards with US\$1.00 or 1 IRC will be returned via the Bureau. "Brazilian post is very expensive now" writes Karl. His correct address (note changed post-code): is: Karl Mesquita Leite, Caixa Postal 385, 59001 — 97, NATAL, RN Brazil.
- I am very sad to report the death of Janos Bolyoczky HA0NHN. I was planning to meet him early in April, whilst visiting Hungary, when I heard of his tragic death, victim of a car accident on 16 March, at the age of 26. Jani was a well known Hungarian DXer and contesteer, he was also the managing director of the St Lazarus Quick Aid Foundation, member of the Nyiregyhaza Radio Club, and the driving force behind the Hungarian DX-pedition to Albania with the callsign ZAIQA.
- The DXCC desk has accredited the recent operations of YA5MM, S2/HA5BUS and OK1AL/YA as valid for the DXCC award.
- The DXAC announced on 22 June, that Ceuta and Melilla (EA9) are not separate DX countries, Spratly Island (IS) was not deleted from the DXCC list, nor was Southern Sudan (ST0) deleted.
- Albania has a new licensing authority: The National Radio Communications Commis-

sion. Foreign amateurs are issued with a licence valid for 3 months, which cannot be renewed during the same year. The foreign amateurs will sign as ZA/home call).

- The Olympic Games in Barcelona have created a multitude of special call signs, too many to list here. The two official Olympic stations are EH92JOB and EG92JOB. Other stations will operate with prefixes EH92, EG92, EH0, EG0. You hear stations also with prefixes AM25, AO25. All Spanish stations might substitute AM for EA and AO for EC. One should not forget also that the International EXPO in Sevilla is still on, with stations EP92EXPO and EF0EXPO.
- The former East German prefixes in the "Y" series will be converted into the DL1 to DL9 Series by the end of 1992. Note also that the German postcodes have now a "W" prefix for the former West German zip codes, and an "O" prefix for the former DDR zip codes. Further code changes are likely when the administrative integration of the two countries has been completed.
- The Clipperton Island DX-pedition has made 50100 QSOs.
- The Canadian special event station XJ35 was active from 29 June to 12 July, commemorating the Bicentennial of John Graves Simcoe first Lt Governor of Upper Canada. QSL with SAE and return postage to VE3YM, Niagara Peninsula ARC, PO Box 692, St Catharines, Ontario, L2R 6Y3, Canada.

QSLs Received

Note: W = week, M = month, Y = year, FM = from, MGR = manager and call, OP = operator and call.

Direct QSLs received: T30RT (4M FM MGR VK4CCR), A61AD (2M FM MGR WB2DND), HC4L (10W FM OP), HC1X/HC8 (2M FM MGR W4XT), EA9PX (3W FM OP), VK9LA (4W FM OP), C21BR (3W FM OP), T32LN (1W FM MGR VK4CCR), BV2FA (10D FM OP), J28GG (4W FM OP), 6Y5EW (6W FM OP). Bureau cards received: ZS6LUX (10M FM OP), H18RS (7M FM OP), 457VK (3Y FM MGR DJ9ZB), 5V4FY (2Y FM OP), 5NOETP (10 FM OP), 5V1YH (3Y FM OP), CXITE (3Y FM OP), XX95W (3Y FM OP), HK5MQZ (2Y FM OP), ZK1KH (12M FM OP), 4Z80TA (12M FM OP) YS1DRF (10M FM OP).

Thank You

Not much fresh input from readers, but as you can see the show is continuing and I need your assistance, co-operation, letters and reports. Special thanks go out to: VK2BEX, VK2BCH, VK2DEJ, VK3DD, VK4CHB, VK4OH, VK5QW, VK5WO, VK9NS, DF5JL, P57KM, EWPBW, and the following publications: QRZ DX, The DX Bulletin and the DX News Sheet.

Good Dx and 73.

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Divisional Notes

VK2 Notes

Tim Mills VK2ZTM

AGM Held

The recalled 1991/92 AGM was held on June 28th with a 60 plus attendance. The business was soon dealt with and there was a period of discussion about the new proposed regulations. A quick Council meeting after the AGM appointed the following major office bearers. President:- Terry VK2UX; Vice Presidents:- Tim VK2ZTM and Roger VK2ZTB; Secretary:- Bob VK2YEL; Treasurer:- Bob VK2AOE. Other office bearers will be given in a later issue of these notes.

The meeting was also informed of two changes for VK2W1 — Dural. The first is that the morning broadcasts will move to the earlier time slot of 10 am from October 25th, and the second was the addition of a third tower on the property. After some years of planning, a self supporting four legged tower, 76 metres high, has been erected. Further details will appear in later notes.

Reg VK2AI fell ill as he was leaving the AGM and was taken to hospital. His condition worsened and he became a silent key on the 4th July. Reg will be missed from the Council, having spent his time working on the QSL Bureau administration as well as Affiliated Clubs Officer.

Other members of the new Council are:- Roger VK2ZJG, Bob VK2CAN, Julie VK2XBR, and John VK2XY who has been co-opted in place of Reg.

Happenings

The Division will be holding an exam on August 30th. Closing August 13th. Contact the office — see page 3 for contact details. The broadcast on the RD weekend at 5.15 pm Saturday 15th August in place of Sunday morning. Next Trash and Treasure, September 26th.

New Members

The following are recent new members joining the NSW Division. Our usual warm welcome is extended to them.

H.B. Austin	VK2NHA	Junee
M. Chemaht	Assoc	Seven Hills
N. Cohen	VK2OP	North Bondi
C.C. Duhigg	VK2XXE	Mona Vale
J.E. Duruz	Assoc	Orimbah
C.S. Ferguson	VK2ZR	Googee
I. Fitz	Assoc	Liverpool
I. Fujima	VK2GRX	Epping
S.P. Gannon	VK2THT	Terry Hills
R. Gow	VK2NO	Taree
F. Horton	VK2MIL	Illawong
A. Karpati	Assoc	Marrickville
K.L. McDonald	VK2GSL	Grays Point
B. Millington	VK2GRI	Sally's Flat
J. Robinson	VK2XY	Hornsby Heights

A. Storal	Assoc	Wentworth Falls
H.T. Tolhurst	VK2GOS	Forster
K. Trankle	VK2GSN	Panania
D.A. Woodside	VK2TZ	Penshurst

Member's Forum

The new council of the WIA NSW Division will be hosting a forum of members and non-members alike to establish the ideals and directions in which our Division should proceed. After all, you can't achieve your goal if you don't know what it is. This is the golden opportunity for the Institute knockers or haters to have a go at the "Faceless Men" while others can give Council the straight drum on what needs to be done. No "sacred cow" will avoid the microscope, even the QSL Bureau. Everything is up for review and analysis as the NSW Division prepares to kick off the dust and leap ahead to the next century.

You, as an individual, will determine our success or failure. There is no point in telling yourself that you are only one person and don't count or won't be heard. Your ideas are our turning point. Without them, your Council can only believe that you don't give a damn about amateur radio or your Institute and they may as well chuck it in to go home for a beer.

Most people are feeling the bite of the "recession we had to have" and for them, cash is tight. Your Division is in the position of having a good hard look at our operation with a businessman's eye aiming for income from a wide base in order to provide our members with goods and services either cheaply or for nothing in exchange for their membership fees, which means that the NSW Division should become self-funding rather than rely heavily on the \$15 per member per year which is our part of a years' fees.

How will our aims be determined and achieved? This is where you come in. You can tell us what you want from your Institute and assist us to achieve it. There are only nine people on your Council. They need your input and assistance on the numerous committees and working parties which keep the show afloat. Your broadcasts, exams, trash and treasure sales, book shop, education, DoIC representation, seminars, QSL Bureau, Federal Council input, repeaters, bulletin boards and the host of other services provided by your Division are all going into the pot. What happens after that is up to you.

If you can attend, get to Amateur Radio House, 109 Wigram St, Parramatta by 12 noon on Saturday 29th August. The forum will probably continue through the following day so if you come from the country, put the word on your amateur mate for overnight accommodation. If you are a country person who can't

make it but want your ideas to count, send them to PO Box 1066, Parramatta, marked "Forum Co-ordinator". The NSW Division needs your input; don't leave it to someone else because "they" never do it.

Julie Kentwell VK2XBR

VK3 Notes

Barry Wilton VK3XY

Antenna Masts

An updated edition of the WIA Victoria "Antenna Masts Guide" is nearing completion and will be available within the next few weeks.

This package is designed to help those Amateurs in their application to local councils and shires for a planning or building permit, which may be required to erect a mast or tower on their property.

The guide will be available at no cost to members or for \$7.50 to non members. A large S.A.S.E. is required.

Sherbrooke Shire

It appears that the shire administrators have a very short memory and have forgotten the help of the Amateur Radio fraternity and WICEN provided during the fires on "Ash Wednesday" and the subsequent long clean-up process.

Sherbrooke Shire is now seeking to amend the shire planning regulations to make radio masts a totally PROHIBITED USE.

The Victorian Division Council has lodged a formal objection to the amendment, and requested that it be given the opportunity to be represented at a panel hearing. We will keep you informed.

TVI Filter Kits

The Division has filters for the combating of TVI available for loan to members, however it DOES NOT have cavity filters for pager interference available, as stated in an article which appeared in AR last month.

Misuse of Repeaters

The abuse of several repeaters is continuing, and pressure for assistance from the DoIC has been increased. Council is well aware of the frustration and anger of those members affected, however the hobby has now entered the age of "self regulation" and it would appear that all Amateurs must collectively assume responsibility for the bad behaviour of a small minority!

Slow Morse Broadcasts

The slow morse practice which was being transmitted continually on 144.950 MHz is continuing as usual. However, the frequency has been changed to 144.975 MHz to avoid a satellite link frequency.

5/8 Wave

Jenny Warrington VK5ANW
Scout radio activities

The first edition of a newsletter called "VK5 Scout Radio Activities News" "passed across my desk" as they say in the classics courtesy

of Peter Koen, Project Commissioner Radio Activities in SA, and I would like to share some of the items with you.

In June 91 Jenny Housden was appointed as the Girl Guide Radio Activities Consultant. I understand that Jenny, like Peter, is working towards getting an amateur licence and in the meantime Jenny has contacted ALARA with a view to having YLs help at JOTA and other times. If you would like to help with either the Scouts or Guides please contact either Peter or me. (Peter's phone number is in most copies of the Journal).

For the past two years VK5 has been included in the JOTA-AUSSAT link thanks to people like Graham Gosewinckel, the Managing Director of AUSSAT, Neil Fallshaw, VK2ZNF, Mike Dower, VK2ENG and Lawrence Abney VK2ZLA at AUSSAT, Belrose, Sydney. It is hoped that this great support will continue this year now that AUSSAT is part of the OP-TUS organisation. It is hoped that this year country stations will be allocated special times when they will get preference.

The SA Branch of the Scout Association has developed a forward plan to take Scouting "Beyond 2000" and yes, radio activities are definitely part of the plan! Those who attended a meeting to support the plan included Don McDonald VK5ADD, Activity Leader Radio Activities, Bob Dodd, VK5ADR, Assistant Cub Scout Leader, 2nd Adelaide and leader of VK5BPA 2nd Adelaide Scout Amateur Radio Club, Derek Reuther VK5AGZ, who looks after the JOTA-AUSSAT Interface and Ashley Kitto, VK5YAK, Venturer, Happy Valley. The future of Scout Radio Activities certainly seems to be in good hands.

Finally, one Scouting Activity which has been receiving lots of Media coverage here in SA has been the visit by 24 children and four interpreters from Chernobyl, from 20th June to 18th July. They are being hosted by the Flagstaff Hill, Mount Lofty and Ridgehaven groups here in SA (Other states also hosted children). The host groups and visitors were all in camp at Woodhouse, in the Adelaide Hills, from the 5th to 12th of July (school holidays) and it was hoped that they would be able to talk to others interstate, or perhaps back home to Russia, via VK5BP.

My grateful thanks to Peter Koen for the above information and also for the encouragement and constructive criticism he has always given me. He isn't alone, of course. Over the years I have received many letters and phone calls, with bits of information, putting me right when I was wrong, telling me when they didn't agree with my point of view, or congratulating me when they did. I would like to thank all of them and hope that they will continue to support Rowland in the same way. When I came back from the 1982 Federal Convention I was very excited by the fact that every Division was to be given a free column in AR. I agreed to start the ball rolling but the

suggestion was that several members of Council would take turns to write it. Well, of course you know what happened! Even my "off the cuff" working title stuck and here I am ten years later. My one plea on Rowland's behalf would be that you feed him (information that is). It is very hard to find copy at times and I know that there are Clubs, groups and individuals doing all sorts of things that the rest of VK5 would be interested to read about.

Goodbye and thanks to you all.

Diary Dates

August 25 General meeting

VK6 Notes

Harry Atkinson VK6WZ

How to improve General Meetings? Divisional council recently discussed this perennial question. Majority seems to rush for the door as soon as they have picked up QSLs and heard the lecture... sometimes leaving insufficient present for a quorum. Your ideas please. Some Divisions have ceased having monthly general meetings altogether — what would you like? Present system? Change to business agenda BEFORE lecture? If the latter, how about a "compressed" business session of, say, no more than 10 or 15 minutes to allow the lecture to begin early? Tell the Secretary or any Councillor your views.

Last month WA saw the departure of one of its well-liked amateur operators — Alan, VK6AR — now settling in at Geelong. Alan, retired from a varied career as ship's radio officer, DCA operator and finally air traffic controller, had a lifelong love of music and was an accomplished organist (theatre pipe and electronic) and pianist. Amateurs knew him as a kindly and patient practice Morse volunteer for the WIA service. We'll look forward to hearing you with a VK3 call, Alan!

QRM from VK7

F Moore VK7ZMF

Permission has now been approved for a test link between repeater 13 VK7RAF (147.250) on Mt Faulkner in the south of the state and VK7RAB (438.550 MHz) on Mt Arthur in the north. The system consists of two Plessey commercial transceivers (UHF and VHF) back to back. Located at the QTH of VK7ZMF at Arthurs Lake Central Highlands with a four element yagi on 70 cms facing north and an eight element yagi on two metres facing south east. Due to foul weather the antennas are only rigged temporarily, but as soon as some of the snow and ice dissipates they will be moved to a more permanent site.

To access the link you will need a tone of 250.3 hertz. Novices beware that you do NOT have this tone enabled whilst using repeater 13 (147.250—147.850) as you will activate the link and thus be out of band.

Also this system will be replaced with a CTCSS unit after the regs are in. Thanks to Joe

VK7JG for all the work he has done on these units so far.

Channel 5A

Good news for the northwest. Channel 5A, a cause of much QRM on two meters will be closing down and being replaced by a UHF TV service in about 18 months.

TARGA TASMANIA

After the success of the inaugural Targa Tasmania motoring event, there will be an ongoing annual event. The southern branch participated with communications which was well appreciated by the organising body. Any branches interested in organising next years communication in your area contact your local WICEN rep or the divisional rep.

SPECIAL EVENT STATION

To commemorate the 350th year of discovery of Tasmania. Special Event call sign V17AJT is issued and any VK7 that would like to have this call sign for the event contact the divisional secretary (VK7EB). The call sign is for the initials ABEL JANSEN TASMAN.

For people wishing to work this station there will be an update on times and frequencies in next months QRM.

RETIREMENT ETC.

The current divisional president and secretary would like to retire after years of serving the members of the VK7 division. So there is an urgent need for someone to fill their shoes. Think about it in the coming months. There is over six months till the next AGM, so there is plenty of time to think it over if you could do these very important chores and, if so, nominate. To find out what the jobs entail contact the president and/or the secretary. I'm sure they will explain what is required.

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Stolen Equipment

Stolen from Chris Field VK2UP on 8 July 1992, one Yaesu FT21HR two metre FM transceiver, serial number 8M180306. Contact Chris (02) 820 2096 (evenings) or (02) 546 2606 (bus).

Stolen from K Brauer VK5AKN between 30 May and 12 June 1992, one TS120S HF transceiver with microphone, serial number 0070741, engraved with driver's licence number S160949. Contact Police at Renmark SA.

Stolen from Vincent O'Donnell VK2ZOD/VK3YOS on 12 June 1992, one DSE Commander two metre FM transceiver with microphone, rear panel engraved with "VK2ZOD" and NSW driver's licence number; microphone socket is a non-standard four pin configuration (early Kenwood).

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Club Corner

Twin Cities Radio and Electronic Club Inc

The inaugural Field Day for the Twin Cities Radio and Electronics Club Inc. will be held on Saturday 8th August 1992, from 1000 to 1630 hours, at the Murray High School, corner of Kaitlers Road and Kemp Street, North Albion. Cost \$4.00 per person, \$6.00 per family.

Demonstration, talks and activities include Amateur SSTV, packet, satellite activities, weather balloon activities, and fox hunts (radio type only).

Talk in to event will be VHF... VK3RNE 147.000 & 146.500 simplex, and UHF... VK3RNE 439.425 & VK2RAY 438.575.

Commercial display sales areas (Yaesu, Kenwood, ICOM, Stewarts, Nally's and others). Swapped table area available. Hot and cold food, drinks available throughout the day.

Further information from the Club net...3,560 MHz, Thursdays 1000z, or from Greg Sargeant VK2EXA (060) 211741 (BH only).

The Best (News) In The West

It's probably old news by now, but VK2RRT digipeater is up and running at last. There are still a couple of small problems with receiver desensing... the digi desenses the voice repeater, the voice repeater BLITZES the digi... but I guess we'll sort them out. At least the operation was a success and the patient is alive.

For the ill-informed, VK2RRT is located at Boona Mountain in Central NSW (find Condo-bolin, it's about 100km north from there) and is operated by AARG, which could be either a primal scream or the Albert Amateur Radio Group. Sometimes it's hard to tell! ROSE access is through VK2RAO-3, 636500. Whilst we are in lighter vein, I'm reliably informed that "RRT" stands for Radio "Rabbit Trap", which glorious appellation graces the pub at, of all places, Albert. Funny sense of humour, these Bushies!

Now to some people a new "digi" is a bit of a hum, we are after all engaged in the serious matter of "protocol wars", but we should spare a thought for the blokes out West who did this thing. AARG covers an area of some 2000 square kilometres and has 8 members, most of whom had a negative income last year. The logistics of getting more than one person in the same place at the same time are unbelievably complex.

First we had a drought and sheep had to be fed, then we had rain and ground had to be

ploughed, then the cycle of shearing... first one bloke then the next, then we had a little more rain and crops had to be planted with a wish and a prayer, then the big day came! Five hardy souls responded to the call "it's on today!" and set forth from all the corners of the known world to climb Boona Mountain. After one small hiccup... we won't say who left the power cord at home... it was almost an anti-climax. Perhaps the power cord incident was a deliberate ploy to thwart Murphy, if so it has my personal recommendation, because everything worked first time!

So now we have a gateway to the West and who knows what may lie ahead. I hear there's a bloke in Cobarr interested. He can't quite access 'RRT' reliably, but if there were some high ground, some spare equipment and a few blokes to give him a hand...

Silent Keys

Due to increasing space demands obituaries should be no longer than 200 words.

The WIA regrets to announce the recent passing of:

D	O'Dea	L20740
RL (Reg)	Brook	VK2AI
AK (Keith)	Ballantyne	VK3AKB
GW	Wiley	VK4AGW
G (Gwen)	Petrich	VK4AZC
WHC (Bill)	Hablutzel	VK4ZWH

Mervyn Wordsworth Busch VK3LL

Mervyn passed away after a short illness on 14th April, 1992 at his home in Bairnsdale, aged 64.

Merv spent his early years on a farm where his introduction to radio came in the early 30's when he put together dozens of salvaged zinc and carbon electrodes to make a HT supply for the family radio receiver. He attended Bairnsdale Technical School and went on to automotive engineering, specialising in diesel engines. He was member of the Society of Automotive Engineers and the Society of Diesel Engineers.

Merv gained his amateur radio licence in 1965, was a WIA member and an RSGB member, holding the call G4DRP.

Now for the credits. The following blokes deserve a medal:-

Norm VK2XCI for starting the whole show with his "Townie" ideas.

Peter VK2BXQ for doing the ground work. AAPRA for the Radio, TNC and support.

Trevor VK2XAQ for getting the radio on channel and on air.

All the blokes who put up with rude noises on the voice repeater.

Peter VK2BXQ (again) for assembling and debugging the system.

Noel VK2EMA, Kerry VK2GQR, Peter VK2BXQ, Robert VK2ERB and Norm VK2XCI who all braved Boona Mt to install and set it to work.

Now for the commercial. There's a bunch of blokes up north trying to get a voice repeater going. They could use some help with a set of cavities. Their club is even smaller than ours, 5 members, and covers almost TEN TIMES the area!... Think about it! If you can help, contact Ed VK4KAA @ VK4ABP, or phone Ed on 076-583062 at home or 076-581783 at work.

73 de The Voice Of The Edge Of The Outback.

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Much of Merv's working life revolved around oil exploration, being Chief Engineer in the Gippsland Region in the 1960's. He subsequently worked in the USA, Canada, Holland and UK where he was Maintenance Supervisor on the North Sea platforms before returning to Australia and the Bass Strait platforms.

Merv was active on the HF bands, but his most remembered radio activity was during the 1965 Victorian bushfires when his Bairnsdale home became a WIGEN base for police, ambulance, CFA and other emergency services 24 hours per day for more than a week.

Merv was a licensed light aircraft pilot. He is survived by his wife Val, son Kaj and daughter Karen.

Bob Neal VK3ZAN

Gwendoline Hilda Petrlich VK4AZC

It is with deep regret and sadness that I advise the passing of Gwen Petrlich (nee Hanson) VK4AZC, on 28th May 1992. Gwen served in the WAAAF from 1942 to 1945 as a telegraphist, and in 1946 married Ron VK2CZ (now VK4ACZ), who was an RAAF Wireless Operator.

An excellent CW operator, Gwen obtained her Novice Licence in 1978, and the full licence in 1980, and was a member of the Cairns Radio and Electronics Club, and assisted licence classes with morse instruction.

She had a wide range of interests which included gardening on their property at Julatien near Mt Molloy, and wine making for which she won prizes at the Cairns show.

Gwen is survived by her husband Ron, son Jim and daughters Lesley and Jenny. Her warm and cheerful personality is greatly missed by family and friends.

Ted Gabriel VK4YG

Dave Richards VK4UG

Dave Richards, VK4UG passed away on Monday, June 22nd in Redcliffe Qld, aged 82, a well known operator since 1969, after being prompted by VK4UA and VK4UC to find a rewarding hobby upon retirement from the Queensland Police Force and settling into Redcliffe with his wife Beryl.

In 1969 Dave became secretary of the new Redcliffe Radio Club, a post he held for over 12 years, seeing the Club grow from a mere 10 members to a healthy 109 members.

From the early seventies until the mid-eighties, Dave was Membership Secretary of the VK4-Division, a function he held with distinction.

In the mid-eighties he decided to retire from his retirement activities including Meals on Wheels, the Endeavour Foundation and other local charities, because of ill-health.

Dave, an active CW'er on most bands, was made a Life Member of the Redcliffe Radio Club in 1985.

All who knew him will remember the Gentleman among gentlemen, Dave Richards, VK4UG. May you rest in Peace.

John Aarsse, VK4QA.

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**Sign up a
new WIA
member
today — use
the form on
the reverse
side of the
AR address
flysheet.**

ALARA

Robyn Gladwin VK3ENX Box 438 Chelsea 3196

This month sees my first report as the new Publicity Officer. I am hoping to be able to bring news from around Australia and would welcome additional material and feedback from readers.



Jean Forbes-Smith VK2NFS.

I would like to introduce two new members. Jean Forbes-Smith VK2NFS served as a telegraphist in the Women's Auxiliary Australian Air Force. She and her husband, Gordon, were involved for many years with training in radio procedure and safety, particularly relating to sailing dinghies and cruising yachts off shore. Her other interests include lawn bowls and voluntary work with the Royal North Shore Hospital Boutique. She also acts as a guide for the Museum in the Rocks, Sydney.

Jean's daughter, Barbara O'Connor, is presently living with her husband, Brian V8SEB, and two young daughters, in Brunei, a small sultanate on the north western coast of Borneo. She is studying for her radio licence by correspondence and we wish her every success. Jean, and Barbara's brother, Kingsley, VK2KFS, maintain regular contact with their overseas family members.

Two of our members have recently received awards for their involvement in amateur radio and we congratulate them on these achievements. Gwen Tilson, VK3DYL, has made the DXCC Honour Roll, a very creditable effort. Judy Atkins, VK3NYL, has been awarded the William G. Clarke Memorial Trophy by the Midland

Radio Club for outstanding service as Coordinator of Club Awards for 1991.

Congratulations also go to Ronnee, VK4KVM, for contacting the Space Shuttle "Atlantis" (SAREX Mission STS 45).



Barbara O'Connor

She had a short QSO with Cathy, N5YYY, calling CQ with the Shuttle call N5WQC.

Our VK4 State Representative, Margaret Schwerin, VK4AOE, has arranged a regular sked time with VK4 YLs as a way of reducing the size of Queensland — radio-wise, that is. She or Pat, VK4PT, can be found on 3580 kHz Fridays at 0930 z.

I will sign with an item from the June Bulletin of New Zealand WARO.

"The use of '33'"

"33" the signature used between YLs is often misused and its origin tends to get lost. YLRL was organised in the US in 1939, and it was at this time that women amateur radio operators seemed to find their niche. "YL" was adopted as a general term denoting any female licensed amateur operator, regardless of age or marital status.

"33" was originated that same year by Clara Reger W2RUF and it was adopted by YLRL for exclusive YL use. It means "Love sealed with friendship between one YL and another YL."

We are reminded that, with this background and meaning, it is understandable that "33" is not only exclusive to YLs but is never used in the plural. We sign "33".

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Over To You

All letters from members will be considered for publication but must be less than 300 words. The WIA accepts no responsibility for opinions expressed by correspondents.

Help Wanted

I am writing to you with a suggestion for an article in a future edition of the magazine. I recently had to give my KENPRO-600RC a refit and re-grease. It is really quite an exercise to remove it from the tower and the pipe holding the antennas, when you're nearly 70, that is!! In replacing the rotor housing I moved the POT DIVIDER Gear which is attached to the Potentiometer that sends the signal down to the Controller unit. This was on the bench and it took me ages to get it where I thought it should be. But, alas, when it went up it was out by at least 20 degrees. It's still up there until I can find out properly how to adjust it. In short, an article on the repair and adjustment of rotators would I am sure be received well by us "Apprentice repairers".

For sure there are good articles of much interest in the magazine, but please remember all the new chums who are just learning and try and get technical articles on their, and may I say even my, level. (I am a retired electrical contractor, not so hot on the electronics). On the whole I find the magazine quite interesting and read it from front to back. I say thank you to all the volunteers who make this possible.

Harold Moss VK2CHM
13 Cedar Cres
Ballina NSW 2478

Thanks for the Response

I take this opportunity to thank the VK operators who responded to my letter regarding QSL cards from SWLs, which appeared in the April edition of "Amateur Radio". There were so many of you that I would be out of pocket if I were to write to you individually.

But I would like to say to the operator who did not identify him/herself, who, from the postmark, resides in VK5, that not all SWL are too lazy to pass the exam to become a full operator. Perhaps that SWL has a speech or other problem.

I have already recommended sending QSL cards to VK-land. Let's hope we have more success from now on.

Roy Bessant
43 Oldfields Drive
Vicars Cross, Chester, England CH3.5LN.

Name Change Again

With regard to Roger Harrison's letter — AR July:-

Good on you Roger. Terrific idea. Amateur Radio Institute of Australia" - concise, to the point, and conveys what we are about.

In fact, "wireless" has come to mean something rather different from what it did in 1910, and is increasingly used as an adjective to describe a computer network which works without wires or cables eg "the wireless office", where infra red, optical or microwave is used as the information carrier. Mind you, we may some day have to change it back to "Wireless" again if amateur radio does become nothing more than a computer network.

Drew Diamond VK3XU
"Nar Melan"
Lot 2 Gatters Rd
Wonga Park VIC 3115

The Future of the WIA and Amateur Radio.

Points to ponder.

1. As the WIA is the official negotiator with the DoTC it would seem a natural evolution for the WIA to take over control of the issuing of amateur licences. This could be incorporated in conjunction with a mandatory entry fee into the WIA.

Not only would it be possible to reduce membership fees significantly if all licensed amateurs were financial members but, collecting the licence fees for the Government, the WIA could negotiate a system similar to Australia Post agencies by which they would receive \$x for y licences issued.

The argument for this suggestion is that all licence holders should be members of a parent body, ie, the WIA. The added income would let the WIA employ more staff instead of relying on the same band of volunteers year after year. This would also make the staff more answerable to the requirements of their positions and stop a lot of rumbling from those who, although unwilling to volunteer any assistance themselves, have always freely criticised various executives who have donated their time and efforts.

These suggestions may raise a furore with many among the majority of non-members who still enjoy the benefits at no cost. I feel sure that if such a scheme were implemented, membership fees could be so drastically reduced that no amateur

could justify avoiding the small cost involved.

2. Switching responsibility for amateur examinations from the DoTC to the amateur fraternity itself has appeared to create more problems than it solved. The government controlled TAFE colleges are continually expanding their adult education, hobbies and pastimes courses. Why not use these establishments to conduct amateur radio examinations?

I feel that these suggestions would not be too difficult to implement and would certainly remove many problems that are becoming more vexatious as time goes by.

Ted Ross VK4TR
PO Box 870

Manyborough QLD 4650

(I cannot agree with the first sentence of point 2 in Ted's letter. Have you evidence, Ted? Do you mean Develvement Version 1 or the current arrangements? Ed.)

Contest Control

An interesting snippet of information appeared in the IARU Region 1 Contests Newsletter recently received here in VK land.

Under the heading of "Restriction on the number of Region 1 Contests", the following was reported:

"During 1991 there had been 105 contests, 15 of which DOMINATED spectrum use. Of these 15, only two had been European contests, DARC WAE and Radiosport. Many of the large world-wide contests were organised by PRIVATE organisations, and were OUTSIDE the control of the IARU."

So for all you contest haters, there is very little your national society may do to limit contest operations when it is in the hands of PRIVATE organisations.

Neil Penfold VK6NE
2 Moss Court
Kingsley WA 6026

WICEN Again

There has been considerable controversy of late regarding the resurgence of WICEN in NSW. Following the enactment of the NSW State Rescue and Emergency Services Act in 1990, the entire emergency services scene has gone through an enormous change. One of the major results has been the realisation that organisations such as CREST and WICEN do have significant roles to play.

The role that WICEN now plays in NSW is probably unique within this Australia-wide organisation. WICEN is very actively involved at the "front line" in a number of situations. In others, WICEN is equally involved in behind the scenes activities.

One thing I have noticed is that the great majority of "WICEN knockers" seem to come from the age group best described as "senior" in years. Virtually all the severe critics of the WICEN uniform are definitely senior in years. In fact, there is a marked generation gap be-

tween the average WICEN member (about forty years old) and these critics, something I found interesting.

WICEN in NSW is very healthy indeed and is growing at an extraordinary rate, from 70 members at the start of 1990 to the current level of 270. Unlike Victoria, NSW WICEN has a joining fee of \$5 and an annual membership of \$10, which makes a membership of 270 quite significant.

Mr Ellis in his recent letter of criticism has himself generated considerable reaction within NSW. Before his retirement to Forster, Stan lived in the Sydney Eastern Suburbs and was an active member of the Waverley ARC. I recently travelled to Sydney to address that club (at their invitation) and found the members were very keen to distance themselves from the comments of their former member.

Whilst Mr Ellis is not alone in his attitude, he is only part of a small minority, but because minorities seem to receive considerable publicity these days, I have felt it necessary to reply to his recent letter. My reply is very lengthy compared to the usual requirements, but I feel it may be suitable for publication as a feature article.

Philip Greentree VK2IW
State Co-ordinator WICEN (NSW) Inc.
51 Jones Bay
Warners Bay NSW 2282

And WICEN Again

Immediate protests from proponents and office bearers of WICEN at my previous letter were to be expected, as was the trotting out of WICEN exhortations and clichés, including the offensive categorisation of the majority of amateurs as "stubbies and thongs" operators.

My concern is not with organisations but with the rights of individual amateurs. An amateur licence entitles the holder to participate in emergency communications if necessary. Relevant authorities to approve this are the police or rescue organisations, who may seek amateur assistance, and who may employ amateurs as required. Or does WICEN deny that they have this right?

If amateurs are not already professional communicators, WICEN training alone will not make them so. Professionalism is not so easily acquired. While training assists those involved with emergency communications, it should be directly with rescue organisations who are crying out for assistance with their own communications systems, rather than with WICEN. Amateurs may have a moral obligation to assist in emergencies, but certainly not to join WICEN.

WICEN may appeal to those who prefer regimentation, but, in emergencies, where self reliance and resourcefulness count, it is the independent amateur who will prevail.

S V Ellis VK2DDI
82 Taree Street
Tuncurry NSW 2428

What's in a Name

Quite a lot really. A name can give an indication of an historical or family relationship eg Johnson, son of John. It may indicate how a company grew, its roots and so on.

One thing a company must do is successfully tell others who and what it is and does. Unfortunately this is where the name "Wireless Institute of Australia" fails to convey any message.

It's fine for you and me, as we already know about the WIA. But suppose you are a Divisional PR officer or President calling a local media outlet seeking free publicity for a "big event". You introduce yourself, and advise your position in the Wireless Institute of Australia, X division.

The next thing you have to explain is that the WIA is the national society of Radio Amateurs, Ham radio if you like. Been in that position yourself? You're on the back foot already. Our name fails to communicate who we are, what we do and who we represent.

In December 1989, a meeting of senior administrative representatives from VK2, 3 and 4 met in AR House in Parramatta. On the agenda was a review of the name of the Institute. The representative from VK4 recommended a new name, viz "THE AUSTRALIAN INSTITUTE OF RADIO AMATEURS".

It tells people what we do, and for whom. It tells them we are Australia-wide, and that we are an "Institute", an august body of learning to be taken seriously, not a loosely bound association.

I note with interest that my learned friend and fellow radical Roger Harrison has also raised this issue. So what do you think? Federal Council is currently reviewing the structure and Articles of the Institute, and so now may be a good time to review our name as well. Even the ARRL is planning a name change, all because their name doesn't convey any message to outsiders. Let your Council know your thoughts.

David Jones VK4OF
18 Browning Court
Strathpine, 4500

Sunday CW nets

It is with interest I read Gordon's note, regarding the Sunday CW nets, inserted on page 33 of July AR.

Because we will have achieved net number 1000, a celebration BYO BBQ/picnic eyeball is planned for Saturday 26th September at QTHR VK3BKU, 12 Norris Road Rowville. Eric Cleburne, VK2BII, anchor man for the net for many years, plans to be in Melbourne on this date. We hope CW net operators will take this opportunity to meet the men and women behind the keys.

The Sunday CW nets are on 7.025 MHz from 10 am to midday EST. New callsigns are always welcome.

Don Ockley VK3BKU
12 Norris Road
Rowville 3178

Station Operation on Kangaroo Island

I wish to advise that my friend, Paul Richards VK3AJJ, and I will be travelling to Kangaroo Island in late September. We currently propose to operate 2 amateur stations from the Island between Saturday 19th and Saturday 26th September 1992. We will be operating on all bands below 30 MHz and will also ensure that Novice allocations are suitably covered.

Unfortunately DoFC have denied our request for issuance of a special call sign therefore we will be using our own calls and the suffix "/portable Kangaroo Island". We have spoken to many people on air who are anxious to add the Kangaroo Island IOTA to their collection. However, to stimulate further interest it would be appreciated if you would include details of our excursion in your magazine.

Norman Hall VK3PGR
1/9 Carlyon Street
Ormond 3204

Commemoration of Marconi

As we are all aware, the WIA has recently marked two significant milestones in its history, the 75th and 80th anniversaries of the founding of the original organisation from which it sprang.

But it seems that this year marks the approximate centenary of radio work from Sr G Marconi at his parent's home near Bologna. In about nine years we will be faced with the centenary of the epoch-making transatlantic tests, on 12 December 1901.

Even before that, 2 June 1996, the centenary of Marconi's first British patent application, is fast approaching.

At about the same time, we should mark the centenary in 1996 or 1997 of what seems to be the first controlled radio transmission in Australia, that of G W Selby and W Bragge.

The centenary of Marconi's first spark transmission passed a few years ago without comment. Let's not forget Marconi, our real founder.

K G England VK1KGE
2 Shann Place Chiffely 2606

Offensive QSL cards

I was truly disappointed to find, in the July issue of Amateur Radio, the image of a QSL card containing swastikas — symbols of the Nazis and reminders of a very dark time in human history.

The inclusion of such symbols with no reference (in the accompanying article) to the horrors committed by many of those who wore them during that dark time is — in my opinion — unbalanced and distasteful.

I call upon the new Editor to develop a policy to ensure that future issues of Amateur Radio will not contain such material.

If — to preclude suspicion of "censorship" — such material must sometimes be includ-

ed, than let a more balanced telling of the history appear with it.

Surely there are many other QSL cards in the WIA collection which are more deserving of our attention than the one chosen for the July issue.

Charles Waite VK5CQ
GPO Box 222 Adelaide 5001

(I think you have read much more into the article than was intended, Charles, particularly since the Nazi atrocities were years into the future from the date of the QSL. Ed)

Co-operation needed

I for one, urge that Barossa Amateur Radio Club to change the date -OR, if necessary, BOTH the date AND the venue — of its 1993 Radio picnic, which was (inadvertently) scheduled on a date now known to conflict with that of the 1993 Walk Against Want.

It would be most unfortunate if even one radio amateur were (again) forced to choose between these two worthy events, when time clearly permits setting a more creative "win-win" solution into place here.

Consider:

1. BARC has the skills to negotiate itself out of any commitment made to the owner(s) of last year's venue, especially at this early date, AND
2. South Australia has a number of other, very suitable venues which are still available for use on another day at about the same time of year.

Just as a good operator will QSY when s/he discovers a QSO in progress on the frequency s/he wishes to operate, a good event scheduler will do what needs to be done to foster or enhance peace in our larger Amateur Community.

A well-known work of art depicts two friends walking along in the snow — each on his own side of the narrow path between them —, and I am convinced that more is gained than is given up by showing consideration for the other party.

Charles Waite VK5CQ
GPO Box 222 Adelaide 5001.

O-V-2's

In June "VK's" from the WIA Collection, AR3TL mentioned the regenerative detector receiver and it reminded me of an experience I had. At the end of 1938, I got my Commercial Operator's Certificate and got a job as a radio operator on a trawler operating out of Sydney. In those days, Sydney had two operators of large trawlers (ex North Sea) that carried Radio Operators, Red Funnel and Cams. I was RO on the Olive Cam and in those days there was no handover-takeover and one went into the job cold. Looking back, I presume that the Company felt that if you were a radio operator, like a bricklayer, familiarisation was not required.

The radio was in the bowels of the ship in

the very small Captain's cabin. On the operating desk, I found two morse keys, side by side. This, of course, intrigued me and when we got to sea, I traced out the wiring and found that one key went to the receiver. The receiver being of O-V-2 design (regenerative detector plus two audio) I concluded that this was for ship to ship communication when in close proximity.

One day I saw another trawler on the horizon, presumably a Cam, as I knew there was another one at sea. I called it on the receiver morse key and to my great surprise, he came straight back on his main transmitter with a S9 + signal, of course. That is the only time that I have conducted a QSO on a receiver.

The wavelength used was 195 metres — all ways metres in those days. The trawlers went to sea for ten to 14 days depending on the catch and went as far south as eastern Tasmania and to the west coast of ZL.

Flathead was the sought after fish and we radioed back to Sydney Radio VIS twice a day, indicating the catch and the total quantity on board.

All messages were in the Company code to keep it from the other Company. The catch was quoted in "baskets of flathead" and "baskets of other". It is interesting to note that these days, flathead seems to have fallen from favour as number one in the fish market. There was no refrigeration as we know it today; we carried crushed ice. The caught fish were placed in sections of the hold and covered with layers of ice.

The transmitter was a T-250 valve; quite a large one approximately 12 inches (30 cm) high with a 6 inch (15 cm) diameter in a Hartley circuit.

I wonder where the "Olive Cam" finished up?

R. N. Torrington VK3TJ
4 Thistle St
Pascoe Vale South VIC 3044

Is Morse Necessary Any More?

I'm a morse man from way back. I learnt it as schoolboy and on joining the RAF I spent my life taking it on a typewriter. Typing has proved far more valuable to me than morse but morse has given me a window on the world which otherwise I would never have had.

But to the nub of the matter. Is morse necessary any more? In my opinion "No!" The key word is "necessary". Yes, once it was necessary. In the earliest days of radio morse was by far the most common method of communication and without it a ham simply couldn't have communicated.

But today it can be visually decoded with PCs and, for fun, I hope some ham somewhere is working out a method of getting a voice output as well. And why not? There are numerous other methods of signalling and I hope it won't be long before hams are faxing each other as readily as they CQ now.

But to make morse today a statutory requirement for a ham licence is nonsense and akin to the man with the red flag walking in front of a car in the primordial days of motoring.

So the necessity for morse has passed and to insist upon hams knowing it is pointless. But that doesn't mean that morse will fade away. I venture to suggest that the opposite will be the case.

Future hams will realise that morse is marvellous and if they want to do it manually they will make every effort to learn it. But a manual competence is no longer necessary because there is no difference between using a PC to decode morse or using a PC keyboard to send it. And that's where the future lies.

Bob Hawksley VK2GRY
21 Wallumatta Rd
Newport NSW 2106

Visitor to VK

I am planning to visit your country AUSTRALIA this August for one year. I will get Working Holiday VISA soon. My plan is: First 10 weeks of my trip, I will go to Insearch Language Centre in Sydney, and study English there. Next about 6 months, I hope to travel and work wherever possible. Last 3 months, I will drive around AUSTRALIA. Especially I am interested in New South Wales (Premier State) and Victoria. Sydney Harbour, Observatory, Chinatown, Manly, Blue Mountains, Wollongong, Snowy Mountains, Port Macquarie, Phillip Island, Puffing billy, Great Ocean Road, Victorian Alps, etc will make me happy.

Also I will visit other amateur radio stations in VK-land. And I would like to meet VK hams who have a great interest in JAPAN. Of course I will get a reciprocal licence. I want to carry my radios to VK-land, but radios are too heavy for me. I can not carry my radios. So I hope to operate from VK stations for a few hours at a time.

Your Japanese Friend

Yoshiaki Goto JH5OWN
3-6-36 Shouenji
Matsuyama-City
Ehime 790
Japan
ar

**Don't buy
stolen
equipment —
check the
serial number
against the
WIA stolen
equipment
register first.**

Repeater Link

Will McGhie 21 Waterloo Cr Lesmurdie 6076 — VK6UU @ VK6BBS

Deregulation

After all the effort and all the waiting it looks like deregulation has arrived. Repeater development can go in what ever direction imagination takes it, unhindered by narrow rules and regulations. To all those who worked long and hard on seeing the changes to this point, well done. Not only Amateurs, but courageous changes of attitude by DOTC have bought about deregulation to Amateur Radio, and in particular, the Repeater scene.

To be specific, what has changed? The big change is to remove all the restrictions. Now if you have a new way of doing it in repeater development you can. Well almost. There are a few requirements but they are few, and make sense. The requirements as I read them are....

1. Maximum repeater or link transmitter power 120 watts.
2. Transmitter time out 10 minutes maximum.
3. Termination of transmission in the event of interference.

These 3 abbreviated statements are in simple language the only technical requirements. There is in effect no change from previous regulations, but that is it. This is what has been removed.

1. Maximum number of repeaters to be linked 3.
2. Amateurs linked only onto bands for which they are licensed.
3. No Off Air Linking.
4. Repeater and link identification.
5. No connection to the switched public telephone network.
6. CTCSS encoding and decoding on links.
7. And a basic philosophy of if in doubt say no.

This removal of all these regulations now gives Amateurs the opportunity to do what Amateur Radio is about, experimenting. The wide scope now available takes some time to comprehend. Can we really have the phone connected to our local repeater if we so de-

cide? At the time of reading the new draft regs, and talking to other Amateurs, the answer is yes.

Is it also true to understand that Amateurs can now be cross linked onto bands for which they are unlicensed? The answer appears to be yes. One statement in the new regs however hints that this may not be true. I quote in part "Traffic within the network is traffic of the network, not the stations accessing the network". What this is saying, apart from the obvious, escapes me, but it may be a way of saying any grade of licence can be placed on a link, but Amateurs can only be re-transmitted onto bands for which they are licensed. It is a big step from the traffic within statement but why state the obvious?

The other possibility is that by defining the traffic within the network, it is simply a way of separating the identification requirements between the repeater network and the users. For me a clearer explanation is required.

Once these draft regulations become the new repeater regs, all repeater builders and managers can look forward to red tape free development.

ar

A Call to all Holders of a Novice Licence

Now you have joined the ranks of amateur radio, why not extend your activities?

The Wireless Institute of Australia (NSW Division) conducts a Bridging Correspondence Course for the AOCF and LAOCF Examinations.

Throughout the Course, your papers are checked and commented upon to lead you to a successful conclusion.

For further details write to:

The Course Supervisor
WIA
PO Box 1066
Parramatta NSW 2124
(109 Wigram Street, Parramatta)
Phone: (02) 689 2417

**11 am to 2pm Monday to Friday
7 to 9pm Wednesday**

Morseword No 65

Solution Page 56

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1										
2										
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9										
10										

Across:

- 1 Pies
- 2 Everyone
- 3 Took to Court
- 4 Cows chew it
- 5 Quickly
- 6 Drags behind
- 7 Marceau is one
- 8 Holy Person
- 9 Trough
- 10 Competes

Down:

- 1 Conditions
- 2 Impolite
- 3 Titles
- 4 Erode
- 5 Droplet
- 6 Not against
- 7 Rips
- 8 Military Car
- 9 Cover up
- 10 Upper House

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**Prevent pirates
— make sure
you sell your
transmitter to a
licensed
amateur.**

HAMADS

TRADE ADS

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● **AMIDON FERROMAGNETIC CORES:** For LF/HF/VHF/UHF applications. Send DL size SASE for data/price to RJL & US Imports, Box 431, Kiama NSW 2533 (no enquiries at office, please ... 14 Boanyo Ave, Kiama). Agencies at: Geoff Wood Electronics, Sydney; Webb Electronics, Albury; Assoc TV Service, Hobart; Electronic Components, ACT; Trustcott Electronics, Melbourne.

FOR SALE ACT

● **YAESU FT790R** all mode 70 cm xcvr, microphone, mobile mount, manual and circuit diagram \$450. Also ICOM IC-02 2W handheld 3220 (plus postage) Ota VK1BN QTHR (06) 295 7525.

● **SHACK CLEARANCE** Yaesu Transceiver FT901D Sino 1010212 with Hi power Low Pass Filter, Viewstar PT1000, microphone, Clipal mouse key, handbook, Micronita F/S-SWR meter type 21525B All exc cond \$850. DSE transistor dip meter type DM4061 with coils book \$85. DSE digital capacitance meter Q1222 with leads, book \$85. DSE laboratory oscilloscope Q1280, no book \$125. Micronita transistor tester type 22-024 leads, book \$40. Kaize ohm meter type 5000U 0-25 ohms and 0-5 ohms leads, \$35. Digital indicating tach/dwell engine analyser multimeter Yu Fong YF 1020S, leads, book \$35. National BN 500 UBE battery operated insulation resistance tester rating 500 V 100 Megohm, book \$35. Avometer type 7 universal, no book \$50. Coaxial switches good quality SA450 two position two for \$75. Technics stereo cassette deck RS B10, handbook \$75. Technics stereo cassette deck M216, no book \$75. Vertical antenna all bands scalar type SC22 DX — MK2, handbook, mounting bracket \$100. Vertical antenna 2128 MHz with loading coil and mounting bracket, no book \$50. Vicom SWR RF power meter type VC 2 with cable, book \$25. Realistic MPA 50 Mono amplifier 5 inputs master control, no book \$50. Transformer heavy duty 240 V/100V 5 A \$50. TEKTRONIC oscilloscope RM 561A, no plug-in units, needs TLC M100. Telex 6120M open reel to multi cassette console, Telex 612C rewind module master plus 3 cassette copiers, Telex 300 reel to cassette unit, not working, no handbooks \$150. Offers considered Frank VK1XE Call BH or Weekends (06) 295 0815 QTHR.

FOR SALE NSW

● **KENWOOD R1000** comm receiver 0 — 30 MHz gen wood cond. \$500 ONO. VK2ATZ Phone (069) 42 1392.

● **KENWOOD TS93X S** No 4110404 exc cond with MC60 microphone \$1500 plus freight. Yaesu FRG7 comms receiver as new \$140 plus freight. Lawrie, VK2FIF, QTHR (066) 28 0418.

● **PALOMAR TX200** HF linear amplifier 12 V \$250. Yaesu FT301D HF xcvr. Yaesu FV-301 ext VFO. Yaesu FP301D 20 amp P/S. Yaesu Y0301 monitor scope, handbooks \$1350. Two Hanimex HTV 12/240 V portable B/W television as new \$75 each. Yaesu FT101E xcvr mic h/book no mode G C spare set tubes \$600. Yaesu FT209RH 2 m hand held xcvr PA-3 car adaptor MH-12 speaker mic never used hand book \$450. Hi-mound key mod E6MK701 new \$80. VK2DBI QTHR (063) 67 5095.

● **FREE** standing commercial 60 ft tower with Hazer platform, extra components included to extend to 80 ft. Excellent condition \$1000 ONO. Contact VK2EGC Enrol (066) 72 3237.

● **DRAKE** station T4XC R-4C MS-4 Pwr sply Includes xcvr functions VG cond. Manuals, desk mic, spares \$475 ONO. Max VK2GE (065) 85 5732

● **PHILIPS** office dictation outfit. Ideal for contest logging \$75. Tequipment D43 (valves) scope \$110. KW2000A xcvr + PSU spare valves, switch fault, offers. Toshiba T-100 RAM packs \$10 each Phone (067) 75 2158 QTHR VK2WS.

● **YAESU FT101ZD** and Kenwood TS530S \$600 each ONO. Yaesu Digital VFO and Kenwood ATU available \$150 each ONO. Trio HF valve transceiver needs general clean up \$200. Computer suit Packet \$500. VK2DIT QTHR (066) 46 6173

● **KENWOOD 930S VGC** \$1700. MC85 mic \$100. H phones ext spt. Amstrad laptop computer 640K 3 1/2 FDD \$500. (02) 427 4321 Col VK2JCO QTHR Tx lic'd amateur only.

FOR SALE VIC

● **YAESU FT-470** Dual band 2 m/70 cm hand held FM transceiver. Accessories, all Yaesu, include: YHA-28 antenna; CA-2 desk stand; MH-12-A2B speaker/microphone; FNB-14 ni-cad battery pack; FNB-11 ni-cad battery pack; PA-6 car adaptor. All as new. Programmed but never used. Desc estate VK3ZSO \$850. Contact Bill VK3JT QTHR

● **DECEASED** Estate Yaesu FT 767G transceiver base \$3,300, Emtron EAT 1000A antenna tuner \$380, Yaesu MD 188 desk microphone (brand new) \$120, Emotator 1103 MSAX rotator, controller & cable \$450, TH6D XX 6 element aerial \$300. Offers considered. Trevor Adams (054) 52 1111.

● **REALISTIC HTX100** 10 metre transceiver as new in box \$200. Shinwa 500 watt low pass filter \$15. 15 metre 2 element Yagi \$50. Radiotron Designers Handbook 4th edition \$10. Mike VK3KTO QTHR (03) 557 5475.

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● **LINEAR HA14** Heath with separate power supply voltage switched and metered. Five bands, full power, excellent \$600. Transceiver 200 watt twenty metres only. Heath HW32 with power supply, matches above \$200. B40 receiver (ex HMAS Melbourne) good performer \$100. Digital meter, Schlumberger with charger, good coverage \$80. VK3DS QTHR (053) 32 3226

● **DRAKE SSR-1** Comm RX No 55720, VGC, \$190. Realistic Patrolman 50 VHF/UHF AM/FM RXCR No 12-776, VGC \$35. Yaesu MH-12A2B hand mic never used, \$40. Michael, AH (03) 879 7598, Fax 874 7608.

● **YAESU FT-One** Transceiver General Coverage in-built Power Supply, Tech man, two microphones. Complete set external test boards, AM filter, GC \$1350. (051) 99 2811

● **ICOM R7000** \$1400 offer S/n 20498 six months warranty. Harmon Kardom amp PM660, Harmon Kardom tuner TU915 \$400. Ray (03) 338 2328.

● **IC751** exc cond with int AC pwr supply \$1800. ask for Ian (057) 52 2631

FOR SALE QLD

● **6m STATION FT690R** plus 100 W linear S/N 010876 perfect \$500 pair. Also Hidaka VS-80 10-80m vertical \$300. Prices firm. VK4CMY, "Doc" (076) 61 6200 BH, AH 61 7494.

● **YAESU** linear amplifier, instruction book, all cables, 10 months guarantee left. A gift: \$2,650. S/N 8M180029. (074) 49 7151 Bob VK4FRM.

● **FIVE** element Yagi for 10 metres. 12 months use only. Perfect condition. \$165 ONO. Jonathan VK4MJD (07) 343 6888

● **FREQ** counter 6 digit auto to 500 MHz \$100. Power supply 0-5-30 V 1 A remote sensing \$20. FR power meter 50 to 150 MHz with peak reading for SSB, 0-5-20-200 watts \$75. 25 drawer cabinet with variety of capacitors, disc, styro, polycap \$35. Carriage extra. VK4ZFO QTHR (077) 79 4641.

● **REMOTE** cable for Azden PCS-3000 2 m transceiver \$25. Bruce VKAAGB (07) 286 5921.

● **TELEREADER** CWR 685A (and printer) VGC \$450.00. Joan VK4BJE (075) 32 6418.

FOR SALE WA

● **TRANSISTORS** final MRF 422 suit 930S, 940S, FT767 etc, matched pair \$110. Transistors final 25C2290 suit most ICOM, Kenwood rigs, matched pair \$80. Graham VK6RO QTHR (09) 451 3561.

WANTED ACT

● **VACUUM TUBES** — 6DJ8, qty 3; 8233/E55L, qty 2; 6BJ7/CB7, qty 1
Frank VK1XE QTHR.

FOR RENT NSW

● QTH for rent near Manly, NSW. 3BR, 2 storey (furnished or unfurnished) house for 12 months from September 15, 1992. Excellent radio location with wind-up tower and 20 m monobander plus VHF. Handy location to schools, Manly ferries, northern beaches and Central Sydney. Sunny northerly views. Further details VK2BLF QTHR (02) 949 6604.

WANTED NSW

● KENWOOD HC10 clock working or not. I am after a replacement cabinet as mine is damaged. Art VK2AS (02) 416 7784.

● HANDBOOK (copy) or loan for copy Paton VCT valve circuit tester. Costs paid for museum use. Stan Dogger VK2KSD Tunnel Rd, Stokers Siding (066) 77 9292.

● HALLICRAFTERS SX100 receiver must be in GC (044) 57 3220.

WANTED VIC

● CIRCULAR polarized 70 cm satellite antenna in GC, Kenpro elevation rotator or similar in GC, 70 cm all mode base or mobile Kanwood TR851A or similar. Please help. Theo VK3CTK (03) 543 3517.

● SHARP ICs P/N IR2431 and IR2432 want tech info and pin connections VK3TJ QTHR (03) 354 2401.

● ANTENNA TH3JNR in good condition. Will collect within 100 km Melb. Andy VK3UJ QTHR (03) 726 8879.

WANTED QLD

● NEED copy of circuit diagram or workshop manual, also operating manual for Marconi sig generator FM/AM model TF 895A/5. All costs repaid. Geoff VK4ZGF QTHR (071) 22 1368 A/H.

● YAESU FT221(R) 2 m all mode Xcvr fair cond must be working order. Gordon VK4KAL QTHR or (079) 85 4168 (nights).

● AWA solid state carphone (M25)FM for spare parts to suit amateur rpt. Any condition working or not. Up to \$50 paid for working unit! Ring (07) 800 6798 AH or write 379-391 Middle Road Greenbank 4124.

● LNC model 12A made for Plessey used for AUS-SAT TVRO. Phone or write to John (070) 96 8328 VK4TL Box 508 Malanda 4885.

● SIMPLEX bug key, old ARRL handbooks. VK4CMY, "Doc" (078) 61 6200 BH, AH (078) 61 7494.

WANTED WA

● WANTED — Intruder Watch Observers. Free tape, postage, logs and advice. Please help keep intruders off our bands. Thank you, Graham VK6RO WA co-ordinator QTHR 09 451 3561.

● KENWOOD TS830S in excellent condition. Preferably with YG455 and YK8CC CW filters. Would also like external VFO for 830S. Steve VK6VZ (09) 349 9703.

**Have you advised the WIA
Federal Office of your new
Callsign? Use the form on
the reverse side of the
amateur radio address
flysheet**

Hamads

Please Note: If you are advertising items For Sale and Wanted please use a separate form for each. Include all details; eg Name, Address, Telephone Number (and STD code), on both forms. Please print copy for your Hamad as clearly as possible.

*Eight lines per issue free to all WA members, ninth line for name and address. Commercial rates apply for non-members. Please enclose a mailing label from this magazine with your Hamad.

*Deceased Estates: The full Hamad will appear in AR, even if the ad is not fully radio equipment.

*Copy typed or in block letters to PO Box 300, Caulfield South, Vic 3162, by the deadline as indicated on page 1 of each issue.

*QTHR means address is correct as set out in the WIA current Call Book.

*WA policy recommends that Hamads include the serial number of all equipment offered for sale.

*Please enclose a self addressed stamped envelope if an acknowledgement is required that the Hamad has been received.

Ordinary Hamads submitted from members who are deemed to be in general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes.

Conditions for commercial advertising are as follows: \$25.00 for four lines, plus \$2.25 per line (or part thereof) Minimum charge — \$25.00 pre-payable.

State:

Not for publication:

☐ Miscellaneous

☐ For Sale

☐ Wanted

Name: Call Sign: Address:

Solution to Morseword No 65

Page 53

	1	2	3	4	5	6	7	8	9	10
1	—	—	—	—	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—	—	—
6	—	—	—	—	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	—	—
8	—	—	—	—	—	—	—	—	—	—
9	—	—	—	—	—	—	—	—	—	—
10	—	—	—	—	—	—	—	—	—	—

Solution for Morseword No 65

Across: 1 tarts; 2 all; 3 sued; 4 cud; 5 fast; 6 tows; 7 miner; 8 saint; 9 sink; 10 vies.

Down: 1 terms; 2 rude; 3 names; 4 rust; 5 bead; 6 for; 7 tears; 8 jeep; 9 hide; 10 Senate.

TRADE PRACTICES ACT

It is impossible for us to ensure the advertisements submitted for publication comply with the Trade Practices Act 1974. Therefore advertisers and advertising agents will appreciate the absolute need for themselves to ensure that, the provisions of the Act are complied with strictly.

VICTORIAN CONSUMER AFFAIRS ACT

All advertisers are advised that advertisements containing only a PO Box number as the address cannot be accepted without the addition of the business address of the box-holder or seller of the goods.

TYPESETTING: Industrial Printing
AND PRINTING: Richmond

MAIL DISTRIBUTION: R L Polk &
Co Pty Ltd
PO Box 140,
Collingwood,
Vic. 3066
Tel: (03) 417 5161

The opinions expressed in this publication do not necessarily reflect the official view of the WIA, and the WIA cannot be held responsible for incorrect information published.

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HOW TO JOIN THE WIA

Fill out the following form and send to:

The Membership Secretary
Wireless Institute of Australia
PO Box 300
Caulfield South, Vic 3162

I wish to obtain further information
about the WIA.

Mr, Mrs, Miss, Ms:.....

Call Sign (if applicable):.....

Address:.....

State and Postcode:.....

WIA Morse Practice Transmissions

VK2BWI Nightly at 2000 local on 3550 kHz

VK2RCW Continuous on 3699 kHz and 144.950 MHz 5 wpm, 8 wpm, 12 wpm

VK3RCW Continuous on 144.975 MHz 5 wpm, 10 wpm

VK4WIT Monday at 0930 UTC on 3535 KHz

VK4WCH Wednesday at 1000 UTC on 2535 kHz

VK4AV Thursday at 0930 UTC on 3535 kHz

VK4WIS Sunday at 0930 UTC on 3535 kHz

V5AWI Nightly at 1030 UTC on kHz

VK6RAP Nightly at 2000 local on 146.700 MHz

VK6WIA Nightly (except Saturday) at 1200 UTC on 3.555 MHz

WIA Divisional Bookshops

The following items are available from your Division's Bookshop
(see the WIA Division Directory on page 3 for the address of your Division)

	Ref	Price to Members		Ref	Price to Members
ANTENNAS			MORSE CODE (Contd)		
Ant. Compendium Vol 2 Software 5.25" IBM Disk	EX255	\$18.00	Morse Code 1 Tapes 5-12 WPM Code Course - Gordon West	EX230	\$53.90
Antenna Collection - RSGB	EX391	\$39.50	Morse Code 8 Tapes Notice Code Course - Gordon West	EX229	\$53.90
Antenna Compendium Vol 1 - ARRL	EX163	\$18.00	Morse Code for Radio Amateurs - RSGB	EX451	\$14.40
Antenna Compendium Vol 2 - ARRL	EX252	\$22.00	Morse Code Tapes Set 1: 5-10 WPM - ARRL	EX332	\$16.70
Antenna Compendium Vol 2 - ARRL	EX254	\$21.80	Morse Code Tapes Set 2: 10-15 WPM - ARRL	EX332	\$16.70
Antenna Handbook - Cir. 1988	EX217	\$23.00	Morse Code Tapes Set 3: 15-22 WPM - ARRL	EX333	\$16.70
Antenna Impedance Matchbox - ARRL	EX257	\$27.00	Morse Code Tapes Set 4: 13-14 WPM - ARRL	EX334	\$16.70
Antenna Note Book WFFB - ARRL	EX379	\$16.00	Morse Tutor 5.25" IBM Disk	EX187	\$18.00
Antenna Pattern Worksheets Pts of 10	EX092	\$2.70			
Antennas 2nd ed John Kraus - 1968	EX259	\$53.80	OPERATING		
Beam Antenna Handbook - New ED. 1990 Cir	EX215	\$23.00	Amateur Radio Awards Book - RSGB	EX297	\$22.50
Easy Up Antennas	MFJ38	\$35.30	Antenn. Techniques - GWA - RSGB	EX393	\$32.40
HF Antennas - Lee Moxon - RSGB	EX188	\$27.90	DACC Compendium - How to Work Your First 100	EX345	\$10.80
Novice Antenna Notebook - DeWalt WFFB - ARRL	EX182	\$19.00	DCCC Country Listing - ARRL	EX386	\$4.10
Physical Design of Yagi - 3.5" IBM Disk	EX388B	\$18.00	FCC Rule Book - A Guide to the FCC Regulations	EX379	\$12.20
Physical Design of Yagi - 3.5" Mac Disk Excel Format	EX388C	\$18.00	Locator Map of Europe - RSGB	EX396	\$5.40
Physical Design of Yagi 5.25" IBM Disk	EX388A	\$18.00	Log Book - ARRL - 9" x 11" Silver Bound	EX396	\$5.40
Physical Design of Yagi Antennas - The Book	EX388	\$38.00	Low Band DXing - John DeWalt	EX396	\$5.40
Reflections - Software 5 inch disk	EX296	\$28.80	Operating Manual - ARRL - 8th Edition	EX392	\$12.40
Reflections Transmission Lines and Antennas - 5.25" IBM	EX389	\$18.00	Operating Manual - RSGB	EX399	\$27.90
Reflections Transmission Lines and Antennas - ARRL	EX389A	\$18.00	Passport to World Band Radio	EX346	\$3.60
Simple Low Cost Wire Antennas	EX348	\$36.00	Prefix Map of North America	EX235	\$7.90
Smith Chart Expanded Scale PK of 10	EX191	\$3.90	Prefix Map of the World - RSGB	EX397	\$9.90
Smith Charts B5Scale 1 SET co-ord impAdmitt Pack of 10	EX191B	\$3.90	Short Wave Propagation Handbook	EX398	\$16.70
Smith Charts Stand Scale 1 SET Cover PK of 10	EX093	\$3.90	The Complete DXer - WSWNI	EX304	\$21.60
The Antenna Handbook - ARRL 1991 edition	EX379	\$36.00	Transmitter Tuning	EX222	\$34.20
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Vertical Antenna Line Transformers - ARRL	EX329	\$38.00			
Vertical Antenna Handbook - Lee - 1990	EX284	\$19.79	PACKET RADIO		
Yagi Antenna Design - ARRL	EX184	\$27.00	AX 25 Link Layer Protocol - DX178	EX178	\$14.40
Yagi The ATX Compendium - BANC	EX279	\$15.90	Gateway to Packet Radio 2nd edition - ARRL	EX369	\$21.60
			Packet Computer Networking Conference 14 1982/5	EX366	\$21.60
			Packet Computer Networking Conference No 10 1991 - ARRL	EX378	\$21.60
			Packet Computer Networking Conference No 5 1986 - ARRL	EX367	\$21.60
			Packet Computer Networking Conference No 8 1987 - ARRL	EX368	\$21.60
			Packet Computer Networking Conference No 7 1986 - ARRL	EX369	\$21.60
			Packet Computer Networking Conference No 8 1989 - ARRL	EX370	\$21.60
			Packet Computer Networking Conference No 9 1990 - ARRL	EX371	\$21.60
			Packet Radio Made Easy - Rogers	MFJ32	\$18.50
			Packet Radio Primer - GBUZY - RSGB	EX340	\$28.80
			Packet Users Notebook - Rogers	EX385	\$16.70
CALL BOOKS			SATELLITES		
Radio Book International 1992	EX339	\$57.80	Oscar Satellite Review - Ingram - 1988	MFJ31	\$15.30
Radio Book International 1992	EX338	\$57.80	Satellite AMSAT 3th Space Symposium - ARRL	EX182	\$15.30
			Satellite AMSAT 5th Space Symposium - ARRL	EX189	\$15.30
			Satellite AMSAT 9th Space Symposium - ARRL	EX449	\$21.60
			Satellite Antennology - 1992 Edition - ARRL	EX190	\$14.40
			Satellite Experimenters Handbook	EX177	\$36.00
			Space Almanac - ARRL	EX299	\$45.00
			Weather Satellite Handbook - ARRL	EX324	\$36.00
			Weather Satellite Handbook Software 5.25" IBM Disk	EX325	\$18.00
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CO Ghost Ship - ARRL	EX204	\$9.40	All About VHF Amateur Radio - Cir. 1988	EX216	\$23.00
Death Valley QTH - ARRL	EX205	\$9.40	International VHF FM Guide - GSJHK - RSGB	EX399	\$12.80
Dr Brings Danger - ARRL	EX206	\$9.50	Microwave Handbook Vol 1 - RSGB	EX318	\$54.20
Grand Canyon QSO - ARRL	EX207	\$9.40	Microwave Handbook Vol 2 - RSGB	EX337	\$51.30
Master by QRM - ARRL	EX208	\$9.40	Microwave Handbook Vol 3 - RSGB	EX347	\$51.30
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			Microwave Update Conference 1988 - ARRL	EX318	\$15.80
			Microwave Update Conference 1989 - ARRL	EX321	\$21.60
			Microwave Update Conference 1991 - ARRL	EX348	\$21.60
			Mid Atlantic VHF Conv. October 1987 - ARRL	EX375	\$15.80
			Spectrum Spectrum Source Book - ARRL	EX365	\$36.00
			UHF Compendium Part 1 & 2 Vol 1	EX250	\$67.50
			UHF Compendium Part 3 & 4 Vol 2	EX251	\$67.50
			UHF Compendium Part 5 German Only	EX334	\$50.20
			UHF/Microwave Experimenters Manual - ARRL	EX325	\$36.00
			UHF/Microwave Experimenters Software - ARRL	EX327	\$18.00
			VHF 2nd Central States Conf. 1987 - ARRL	EX372	\$15.80
			VHF 2nd Central States Conf. 1989 - ARRL	EX386	\$15.80
			VHF 4th Central States Conf. 1990 - ARRL	EX322	\$15.80
			VHF 25th Central States Conference 1991 - ARRL	EX338	\$21.80
			VHF 26th Central States Conference 1992 - ARRL	EX346	\$21.80
			VHF West Coast Conference 1992	EX344	\$21.80
			VHF/UHF 18th Eastern Conference - ARRL	EX345	\$21.80
			VHF/UHF Manual - RSGB	EX367	\$36.00
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WIA Badge - Diamond With Call Sign Space	EX353	\$4.00			
WIA Badge - Traditional Blue	EX354	\$4.00			
WIA Badge - Traditional Red	EX355	\$4.00			
WIA Card Window Stickers	EX356	\$0.50			
WIA Tape - Sounds of Amateur Radio	EX357	\$7.00			
			WIA PUBLICATIONS		
			Australian Radio Amateur Call Book - 1992	EX100	\$10.00
			Band Plans Booklet	EX280	\$2.80
			5.8k Log Book - Horizontal or Vertical Format	EX281	\$16.70
			WIA Novice Study Guide	EX282	\$1.50
WIRELESS					
Advanced Morse Tutor - 3.5" Disk	EX328A	\$36.50			
Advanced Morse Tutor - 5.25" Disk	EX328B	\$36.50			
Morse Code - The Essential Language	EX223	\$16.80			
Morse Code 2 Tapes Notice Code Course - Gordon West	EX230	\$53.90			
Morse Code 6 Tapes 12-20 WPM Code Course - Gordon West	EX231	\$63.90			

Not all above are available from all Divisions (and none is available from the Executive Office).

If the prices is carried by your Divisional Bookshop, but is not in stock, your order will be taken and filled as soon as practicable.

All items are for WIA members only - postage and packing, if applicable, is extra.

All orders must be accompanied by a remittance.



IC-751A

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IC-970A/H

Our features speak volumes. Rather than write hundreds of words to introduce the new IC-970A/H (pictured above) and some of our other base units, we'd like you to phone us free on (008) 338 915.

We'll provide you with detailed brochures and the name of your nearest authorised Icom dealer. Alternatively, you can write to Reply Paid 1009 Icom Australia Pty Ltd P.O. Box 1162 Windsor Victoria 3181. Telephone (03) 529 7582 A.C.N. 006 092 575